

Disaster Preparedness and Response in Cuba:
The Impact of Solidarity on Disaster Management

by

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Submitted in partial fulfilment of the requirements
for the degree of Master of Arts

at

Dalhousie University
Halifax, Nova Scotia
November 2019

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Dedication Page

For Mom, Dad, Brendan and David.

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Abstract

This thesis examines Cuba's disaster response and preparedness measures. The central research question asks: Is Cuba's disaster management model effective in protecting and enhancing the livelihoods of its citizens? Following this, what are the lessons to be learned from Cuba's approach to disaster management and protentional recommendations for other countries and disaster management organizations. What does Cuba's disaster management system say about the concepts of human security and solidarity? This study uses a multiple methods approach, which includes the analysis of literature, interviews and observations. The results of this research demonstrate that Cuba's disaster management model effectively organizes and responds to the needs of its citizens, which is highlighted through the reduction of vulnerabilities, and the preservation of human life, dignity and community ties. Furthermore, this research illustrates that Cuba's national and international relief strategies emphasize, employ, and act in accordance with the ideologies of solidarity and cosmopolitanism.

List of Abbreviations Used

- CDR – Committees for the Defense of the Revolution (Comités de Defensa de la Revolución)
- CITMA – Ministry of Science, Technology and Environment (Ministerio de Ciencia, Tecnología y Medio Ambiente)
- DCN – National Civil Defense (Defensa Civil Cubana)
- FLACSO-Cuba – Latin American Faculty of Social Sciences (La Facultad Latinoamericana de Ciencias Sociales)
- FMC – Federation of Cuban Women (La Federación de Mujeres Cubanas)
- GTE-BH – State Working Group for the Havana Bay (Grupo de Trabajo Estatal Bahía Habana)
- INSMET – Cuban Institute of Meteorology (Instituto de Meteorología de la República de Cuba)
- REB – Social Sciences and Humanities Research Ethics Board
- RRMC – Risk Reduction Management Centres
- UNDRO – United Nation Disaster Relief Organization

Acknowledgements

I would like to thank Dalhousie University for allowing me the opportunity to study in the Department of International Development Studies.

Thank you to Dr. Robert Huish for being my supervisor and guiding me through this process. Dr. Emily Kirk, thank you for your constant support and being part of my committee. I would also like to thank Dr. John Kirk for his expertise and acting as my external.

Thank you to my classmates for being part of this journey with me. Your pep-talks, co-working sessions and support are deeply appreciated.

Thank you to all of the professors and staff at FLACSO-Cuba. Thank you for hosting me, helping me navigate Havana and taking the time to speak with me about Cuba's disaster management system. I will always appreciate your generosity and thoughtfulness.

Thank you to all those I interviewed and spoke with during my time in Cuba. Your hospitality and insight will always be remembered and appreciated.

Thank you to Anna and Elena for welcoming me into your beautiful home and always looking out for me. I will always appreciate your generosity and kindness.

Finally, I would like to thank my family and friends for their constant support and words of encouragement.

David, thank you for your patience and acting as a calming force in this process. Thank you for listening and supporting me at every step of the way.

Mom, Dad and Brendan, thank you for encouraging me to do what I love and believing in me and my dreams. Thank you for being my support system throughout this journey. I could not have done this without you. I am eternally grateful for your love, support and guidance.

Chapter 1: Introduction

Foreword

In 2017, several major hurricanes impacted the Caribbean. In Puerto Rico, some 2,975 people died as a result of Hurricane Maria (“Puerto Rico Increases,” 2018), a Category 4 hurricane (“Hurricane Statistics,” 2019). 10 months later, 1,000 people were still living without electricity (Laughland, 2018). In contrast, Hurricane Irma, a Category 5 storm (“Hurricane Statistics,” 2019), struck Cuba in September of 2017 and resulted in only 10 deaths (Althaus, 2017). While Hurricane Irma caused 13 billion US dollars in damage and impacted 158,554 homes in Cuba (United Nations, 2017), airports and hotels were re-opened two months later (Peñalver, 2017).

Practical Problem

Despite repeated exposure to severe storms, such as hurricanes, and suffering from a struggling economy, Cuba’s disaster management model continues to demonstrate the capacity to protect the population from vulnerabilities and enhance livelihoods. In the last fifteen years, 30 hurricanes have hit Cuba, which resulted in the deaths of 56 people (J. López, personal communication, October 17, 2018). For example, in 2008, Category 4 (“Hurricane Statistics,” 2019) Hurricane Ike and Category 4 Hurricane Gustav (“Hurricane Gustav,” 2008) struck Cuba, causing only 7 deaths (Keyser & Smith, 2009). Eight years later, as a result of Hurricane Matthew, over 1,000 people died in Haiti and

40 people were killed in the United States, but no lives were lost in Cuba (E. Kirk, 2017). Furthermore, Cuba's disaster preparedness and response practices have been praised by multiple organizations, such as the United Nations and Oxfam (E. Kirk, 2017). The United Nations Development Program and the International Federation of the Red Cross and Red Crescent Societies have stated that Cuba is "an example for other countries to emulate in risk reduction" (Oxfam America, 2004, p. 4).

As a result of climate change, ocean temperatures are warming, and sea levels are rising. Consequently, hurricanes in the Atlantic Ocean have been increasing in intensity and frequency (Center for Climate and Energy Solutions, 2017). In 2017 alone, a total of 21 hurricanes, including Hurricanes Harvey, Irma and Jose, passed through the body of water (National Hurricane Center, 2018). In an era of climate crisis, there is an inability for countries to avoid and not respond to the impacts of natural disasters. However, for many countries the practices of disaster capitalism have become the norm. Disaster capitalism is defined as "government and economic policies and practices that have found ways to make 'disasters' profitable as a new source of capital" (Adams, Van Hattum & English, 2009, p. 624). Natural disasters can cause "an acute temporary crisis" (Schuller & Maldonado, 2016, p. 62). Due to the swift action and assistance that is needed in the wake of a natural disaster, disaster capitalism has the capacity to flourish and thrive. Schuller and Maldonado (2016) state, "Following a disaster, local governments need a quick response and usually large sums of financial assistance to respond" (p. 62). In times of disaster, nations often rely on donor assistance (Schuller & Maldonado, 2016). Instead

of emphasizing the use of social infrastructure, institutions and welfare, countries utilize the services of the private sector and corporations. (Adams et al., 2009).

More often than not, these procedures do not secure the vulnerabilities and livelihoods of individuals impacted by natural disasters. Instead, the practices of disaster capitalism “reproduce conditions of displacement as often as they ameliorate them” (Adams et al., 2009, p. 625). The primary objective of disaster capitalism is not to rebuild. Alternatively, disaster capitalism seeks to reshape “everything” and uses disasters to generate economic income (Klein, 2005, para. 9) and “advance the interests of private constituencies” (Schuller & Maldonado, 2016, p. 63). As stated by Hotson (2016), “Disaster capitalism operates by delivering massive shocks to the system and then using the ensuing period of anarchy, fear and confusion to reassemble the pieces of what it has broken into a new configuration” (para. 9). Unfortunately, this process is not by accident, but is in fact a cornerstone of the institutional design for disaster response assistance.

Hurricane Katrina is an example of the pitfalls of disaster capitalism, in which the “transfer of government funds from institutions of social welfare and public works to those free-market privatization and security occurred” (Adams et al., 2009, p. 626). Hurricane Katrina hit Alabama, Louisiana, and Mississippi in 2005. As a result of the hurricane, 1 to 1.5 million individuals were displaced and 1,800 lost their lives. In total, Hurricane Katrina caused 80 billion US dollars in damages (Schuller & Maldonado, 2016). More specifically, the disaster had a resounding impact on New Orleans due to a

“combination of extremely heavy weather – possibly linked to climate change – and weak and neglected public infrastructure” (Klein, 2017, para. 41). The impact of Hurricane Katrina revealed “a weak, underfunded, ineffective public sector on the one hand, and a parallel richly funded corporate infrastructure on the other” (Klein, 2008, p. 492). Schuller and Maldonado (2016) assert, “What is most significant to consider here is not the disaster event itself, but rather the disaster *after* the event that reproduced social inequalities, in large part through the process of disaster capitalism” (p. 61). After Hurricane Katrina, “a plan emerged to ram through a pro-corporate wish list with maximum velocity” (Klein, 2017, para. 33).

This is best exemplified by the case of the New Orleans levees. In only 24 hours, the levees collapsed and caused 80 per cent of the city’s flooding, which primarily impacted residential areas (Schuller & Maldonado, 2016). The levees that were intended to “protect the city did not hold” because the state had “allowed [them] to fall into a state of disrepair” (Klein, 2017, para. 25). In the aftermath of the hurricane, the state aimed to “clean up the mess” (Adam et al., 2009, p. 630), which specifically targeted areas with public housing. Contracts were sold to private companies, residents were evicted and public housing units – even if they did not sustain major storm-related impacts (Klein, 2005) – were demolished and replaced with “mixed-income condominium properties” (Adam et al., 2009, p. 630). Furthermore, rather than use public or local resources, the state used a variety of contractors to complete relief-related tasks. For example, the Federal Emergency Management Agency paid outside sources to install government-issued tarps on rooves that had been impacted by the hurricane (Klein, 2008). The state’s

response to relief in New Orleans demonstrated that the notion where “disasters are a kind of time-out for cutthroat capitalism, when we all pull together, and the states switches into higher gear – had already been abandoned” (Klein, 2008, p. 490-491).

In contrast, Cuba’s disaster management model emphasizes and enforces differing ideologies, practices, and values. Through normative values and commitments, Cuba’s disaster management system incorporates state management, community participation and regional cooperation. Furthermore, the Cuban disaster management model assists its own population as well as other nations. In refuting the values and strategies of disaster capitalism, Cuba created a working model of disaster management based on solidarity values and cosmopolitan ethics. However, the significance is not just that Cuba has a working disaster management model. The Cuban model demonstrates that there is an effective alternative to disaster capitalism practices. While disaster capitalism may be the global norm, Cuba’s approach is both distinctive and impactful.

Due to the expected increase in frequency and ferocity of hurricanes in the Atlantic Ocean, it is imperative that disaster management organizations and at-risk nations have the adequate tools and strategies to prepare for as well as respond to the impacts of natural disasters. Therefore, this thesis has the capacity to illuminate the efficacy of Cuba’s disaster management practices and generate a discussion about solidarity, cosmopolitanism and best practices regarding disaster management. In examining the Cuban model, there is an opportunity to share strategies and

recommendations, which could impact preparation and mitigation procedures and, in turn, reduce the number of lives lost.

Research Question

Considering that Cuba's disaster management system continues to show resilience amid increasing climate change-related disasters, the key research question that arises is whether Cuba's disaster management model is effective in protecting and enhancing the livelihoods of its citizens? Following this, several sub-questions may be asked: What are the lessons to be learned from Cuba's approach to disaster management and potential recommendations for other countries and disaster management organizations? What does Cuba's disaster management system demonstrate about the concepts of human security and solidarity? In order to inform the research question of this study and to determine the underlying motivations that support this model, I examine Cuba's disaster management system through the concepts of solidarity and cosmopolitanism.

Defined as a "relation forged through political struggle which seeks to challenge forms of oppression" (Featherstone, 2012, p. 5), the concept of solidarity highlights the interconnection and commitment between individuals (Kritikos, Bolle & Tan, 2007). According to Kritikos et al. (2007), the solidarity framework is an "implicit agreement of many individuals as of a group. It calls for complete unity as of opinion, purpose and interest" (Kritikos et al., 2007, p. 73). The solidarity approach emphasizes the importance of communal support and unity, where individuals are all considered "members of one

body” (Kritikos et al., 2007, p. 73). Therefore, the significance of solidarity provides individuals the opportunity to foster connections “between places, activists and diverse social groups” (Featherstone, 2012, p. 5). In addition, the cosmopolitanism theory is based on the notion of universalism (Fine, 2007), where all humans are regarded “as equal beings” (Goodin, Pettit & Pogge, 2007, p. 312). Therefore, cosmopolitanism suggests that people are “ultimate units of concern for everyone – not only for their compatriots, fellow religionists, or such like” (Pogge, 1992 p. 49). The use of these theoretical frameworks will provide insight on the values that form and propel Cuba’s national and international disaster preparedness and response strategies. This thesis argues that Cuba’s domestic and international disaster management practices are grounded within the obligation of these moral and ethical duties, which is unique within the context of disaster management. In understanding the moral frameworks that shape this disaster management system, it will be possible to provide resolutions to the research question of this study.

Research Problem

In order to answer the main research question, it is necessary to apply primary research methods to collect data regarding Cuba’s disaster management system. This research incorporates a multiple-methods qualitative approach. In this study, the following qualitative methods are applied: literature analysis, semi-structured interviews, and informal observations. The analysis of academic and policy literature provides an understanding of the theoretical frameworks used in this study and Cuba’s disaster

management preparedness and response measures. Furthermore, semi-structured interviews assisted in the evaluation of disaster-related risks and hazards in Cuba and the country's overall disaster management program. Through these semi-structured interviews, an in-depth understanding of Cuba's disaster response processes and preparedness measures was acquired. Informal observations were also conducted to understand the Cuban state's practices to prepare for natural disasters, to educate the population in readiness, and to evaluate risks and impacts related to natural disasters. It also allowed for documenting life in Cuba to illustrate the role and significance of solidarity in Cuban society. Through these qualitative methods, it is possible to comprehend the efficacy of the Cuban disaster management model and assess the key takeaways and recommendations for other countries and disaster management organizations.

Thesis Statement

This thesis argues that the values of solidarity and cosmopolitanism guide as well as propel Cuba's disaster management system. Within the Cuban disaster management system, challenges remain and opportunities for further improvement exist. However, the overall efficacy of the Cuban disaster management model is grounded in solidarity, disaster education, and preparedness procedures, which has resulted in the island's ability to reduce risks and provide disaster assistance abroad. While Cuba's disaster management model may be regarded as exceptional, it is simply an example of following best practices. The significance of this is that through the educational emphasis and

normalization of this model, it is possible to share recommendations with other countries and disaster management organizations, which could potentially lead to the implementation of similar strategies and values.

Framing the Issue

This research focuses on the design, efficacy and impact of Cuba's national and international disaster response strategies. It is worth noting that "the Cuban archipelago is located in the Tropical Beltway, a zone that year after year is pounded by hurricanes" (Millan Alvarez, 2010, p. 42). Indeed, Cuba is situated in the Caribbean Sea, which is the "fourth global region of tropical cyclone formation" ("Desastres Naturales," n.d., p. 101). While the country is susceptible to a variety of natural hazards, such as strong winds, flooding, drought and fires, hurricanes are considered to be the most common natural hazard to impact Cuba and its citizens (E. Álvarez, personal communication, October 23, 2018). As such, due to Cuba's geography and size, hurricanes and tropical storms have the capacity to pass through and impact multiple provinces and areas within the country (J. Fernández, personal communication, October 30, 2018).

On average, Cuba faces "two to three natural disasters per year – usually in the form of hurricanes" (E. Kirk, 2017, p. 2). As stated by the United Nations Disaster Relief Organization (UNDRO), a natural disaster is described as an event that causes one million US dollars in damages or results in the deaths of at least 10 individuals (E. Kirk,

2017). The UNDRO states, “Natural disasters destroy lives, property, livelihood and the social fabric of the communities” (Sims & Vogelmann, 2002, p. 390).

In addition to the island’s unique geography, Cuba also has a distinctive history, particularly regarding revolutionary Cuba (or post-1959 Cuba). In 1959, the Revolution, led by Fidel Castro, ousted Fulgencio Batista. This unequivocally and dramatically shifted Cuba’s ideological, political and societal frameworks (D. Rodríguez, personal communication, November 1, 2018). Prior to the Revolution and in the early stages of Fidel Castro’s leadership, the Red Cross, firefighters and police were in charge of mitigating impacts of natural disasters in Cuba (Bermejo, 2006). However, in October 1963, Cuba was hit by Hurricane Flora (Bermejo, 2006) and, in turn, drastically changed the country’s disaster response strategies. The hurricane impacted the Eastern region of Cuba. Maximum winds registered at 200 kilometres per hour, in addition to an accumulation of 2,025 millimetres of rain (J. Fernández, personal communication, October 30, 2018). While only considered a category two storm (J. Fernández, personal communication, October 30, 2018), Hurricane Flora resulted in the deaths of some 1,200 people and caused extensive material damage (Bermejo, 2006). In response to Hurricane Flora, Cuba and its government enhanced its disaster preparedness and protection strategies through the establishment of the National Civil Defense (Defensa Civil Cubana) (DCN) (Bermejo, 2006). As stated by Bermejo (2006), “To avoid loss of life and to assure rapid recovery, the system organizes support and coordinators provincial systems throughout the country” (p. 15). The management system has since improved significantly. For example, in comparison to the impact of Hurricane Flora in 1963, when

Hurricane Ivan researched the island in 2004, two million people were effectively evacuated and there zero fatalities were recorded (Thompson, 2007). Notably, the success of lives-saved during Ivan was not the exception. The comprehensive system of disaster preparedness and management has evolved since the 1963 crisis and has been deeply rooted in Cuban society.

For example, disaster preparedness and response procedures are firmly integrated within state policies and laws. In Article 128 of Cuba's Constitution, the President of the Republic has the responsibility "to order a general mobilization when the defense of the country requires it, as well as to declare a state of emergency or a situation of disaster" (Cuba's Constitution, 2019, p. 38). Furthermore, Article 137 of Cuba's Constitution asserts that the Council of Ministers are charged with the duty to "safeguard lives and property in case of disaster" (Cuba's Constitution, 2019, p. 41).

In addition to the Constitution, Law No. 75 of the National Defense as well as Decree-Law No. 170 of the System of Civil Defense Measures regulate and sanctify the responsibility of disaster preparedness and response within the DCN system. In the event of a state of emergency, such as a natural disaster, Law No. 75 declares that the National Defense Council can organize the mobilization of the population (Gaceta Oficial de la República de Cuba, 1995). In addition, the provincial, municipal and zone defense councils are instructed to take immediate action to mobilize forces in response to a natural disaster. In Law No. 75, the President of the State Council can utilize armed forces to "face and eliminate the consequences of natural disasters" and protect the

population (Gaceta Oficial de la República de Cuba, 1995, p. 4). Article 11 of Law No. 75 asserts that the National Defense Council has the capacity to authorize “the evacuation of citizens from their places of residence, with the purpose of protecting them against the dangers of war, natural disasters or other types of catastrophes, as well as providing the necessary conditions for their survival” (Gaceta Oficial de la República de Cuba, 1995, p. 2). In the event of an emergency, Law No. 75 regulates that all resources are placed under the jurisdiction of the government “in order to meet the needs of the National Defense during exceptional situations” (Gaceta Oficial de la República de Cuba, 1995, p. 2).

Decree-Law No. 170 outlines “the organization and execution of the measures of the civil defense for the protection of the population and the economy” (Gaceta Oficial de la República de Cuba 1997, p. 243). Furthermore, in the event of a natural disaster, other organizations, agencies and institutions within Cuba must open a means of communication with the DCN and make their resources available to assist the population (Gaceta Oficial de la República de Cuba 1997). Decree-Law No. 170 also outlines that the DCN is required to work in coordination with other governing bodies, such as the Ministry of Agriculture, Ministry of Public Health, Ministry of Finance and Prices, Ministry of Science, Technology and Environment to execute specific tasks in cases of natural disasters (Gaceta Oficial de la República de Cuba, 1997).

Furthermore, Cuba’s disaster management approach integrates communal organization, where the government and population actively participate in disaster preparedness and response processes (E. Kirk, 2017). Bermejo (2006) states, “Planning

for natural disasters is integral to the political and economic life of Cuba, nationally and locally” (p. 16). Organizations, such as the Federation of Cuban Women (La Federación de Mujeres Cubanas) (FMC), the Committees for the Defense of the Revolution (Comités de Defensa de la Revolución) (CDR), DCN (E. Kirk, 2017) and the Cuban Institute of Meteorology (Instituto de Meteorología de la República de Cuba) (INSMET) (Thompson, 2007), all play integral roles in preparing, mobilizing and responding to disasters on a local, provincial and national level.

The Cuban approach also emphasizes the importance of disaster education, which is deeply rooted in the country’s organizational framework. Disaster preparedness is integrated within the school system, where students participate in lessons on disaster prevention, preparation and response (E. Kirk, 2017). Additionally, the Cuban population is required to partake in disaster training exercises (E. Kirk, 2017).

In addition to nationally preparing and responding to disasters, Cuba works in cooperation with other countries to provide international care and aid in crisis situations. Since 1960, Cuba has sent over 325,000 medical professionals overseas (Barbosa León, 2016a). Cuban internationalism can be explained as a “moral obligation for states to cooperate, not compete” (Huish, 2013, p. 71), in which Cuba “aims to establish...relationships of solidarity with other countries” (Huish, 2013, p. 17).

Perhaps most significantly, in 2005, Cuba established the Henry Reeve Brigade, a group of medical personnel who specialize in global emergency response (J. Kirk &

Walker, 2016). The emergency response group consists of 10,000 health care professionals (J. Kirk, 2009) and was first created to “offer medical relief to victims of Hurricane Katrina in the US” (Huish, 2013, p. 158). When Hurricane Katrina struck New Orleans in 2005, Cuba offered to supply the United States with 1,586 doctors and several tons of medical supplies (J. Kirk, 2009). However, President George W. Bush dismissed the offer and prohibited Cuba from providing aid and relief services (J. Kirk, 2009). Despite the impact of Hurricane Katrina resulting in 125 billion dollars in damage and 1,833 deaths (“Hurricane Katrina Statistics,” 2019), the Cuban assistance was never accepted. Nonetheless, the tragedy marked the beginning of the Henry Reeve Brigade, which has continued to contribute to dozens of countries following a wide variety of natural disasters.

Outline of Document

This thesis examines and provides an overall analysis of Cuba’s disaster preparedness and response processes. The thesis is comprised of Chapter 1: Introduction, Chapter 2: Theoretical and Conceptual Frameworks, Chapter 3: Methodology, Chapter 4: Findings and Analysis and Chapter 5: Takeaways, Recommendations and Conclusions.

In Chapter 2, the concepts of solidarity and cosmopolitanism will be outlined and discussed. This chapter will offer a general summary and description of solidarity and cosmopolitanism. Chapter 3 will outline the research methods used to answer this study’s research question. Furthermore, the chapter will provide a general overview of

conducting field research in Cuba. Chapter 4 will include the fieldwork findings and will also include an analysis of the results, which will answer the research question as well as discuss the concepts of solidarity and cosmopolitanism. Finally, Chapter 5 will summarize the main takeaways and lessons learned and contain recommendations for other countries and disaster management organizations. Chapter 5 will also include concluding remarks that will summarize the research and respond to the research question and thesis statement.

Chapter 2: Theoretical and Conceptual Frameworks

The Ideological Examination of Cuba's Disaster Management System

In this thesis, a set of theoretical concepts are used to frame, comprehend, and explain Cuba's disaster management practices and procedures. A qualitative approach is used to answer the research question, which will be fully outlined and described in the subsequent chapter. In relation to theoretical and conceptual frameworks, the application of a qualitative research study can offer a broad-spectrum and comprehensive "explanation for behavior and attitudes, and it may be complete with variables, constructs and hypotheses" (Creswell, 2009, p. 61). Through these theoretical concepts, it is possible to analyze the connection between the variables of this study and, in turn, determine how Cuba's disaster management system relates to the concepts of solidarity and cosmopolitanism.

Therefore, in order to interpret and analyze the rationale and efficacy of Cuba's disaster management system, this research applies two distinct, but interrelated theoretical and conceptual frameworks: a solidarity approach and theory of cosmopolitanism. These theoretical concepts will be used to structure, as well as to provide a more contextual, developed, and detailed analysis of Cuba's disaster management system. Furthermore, the theoretical concepts of solidarity and cosmopolitanism will inform the key research question in the exploration of this model.

A Solidarity Approach

Derived from a legal notion, the concept of solidarity describes a concrete and firm responsibility “for the whole, joint liability, common debt, solidary obligation...One for all, all for one,” (Brunkhorst, 2005, p. 2). Often arising from political and civil strife (Featherstone, 2012), solidarity “seeks to challenge forms of oppression” (Featherstone, 2012, p. 5). Furthermore, solidarity is described as a “question of basic morality” (Appiah, 2006, p. 157) and relies on “person-to-person organization” (Huish, 2014, p. 4). The concept of solidarity is defined as “a group of people being united or at one with regard to...interests, values...having genuine concern for each other’s welfare” (Cureton, 2012, p. 696). Solidarity can be generated and articulated in many ways and “range from the spectacular to the mundane” (Crow, 2002, p. 1). Furthermore, solidarity “can vary with group sizes” (Kritikos, Bolle & Tan, 2007, p. 75) and it is possible to be expressed in or among groups of individuals (Kritikos et al., 2007), such as families, friends, communities and social movements (Crow, 2002). Ferdman and Kohn (2018) assert, “Solidarity links the social, political and moral together, in a distinctively political approach that recognizes the social sources of power on the one hand and source of moral motivation on the other” (p. 545). Solidarity is explained as being “motivated by emotions; requires collective action; must have consistent objectives and outcomes; evolves and disappears; differs when voluntary or involuntary, and; depends on who benefits from it” (Kritikos et al., 2007, p. 74). In the case of solidarity, it is possible for humans to be in unity “over, for or with respect to something,” (Cureton, 2012, p. 697). This can include, but is not limited to, loss, oppression, similar aspirations, communal

activities, religious beliefs, interests and/or values (Cureton, 2012). Furthermore, there is often an overlap of these elements in practical examples of solidarity (Cureton, 2012). Cureton (2012) states, “Being united with others in these ways provides the basis for the formation of the solidary bonds, which involve respecting one another as group members, caring about each other’s well-being, taking pride in the group and so on” (p. 697). The concept of solidarity can be further explained as “the bond between members of a community united by shared characteristics” (Ferdman & Kohn, 2018, p. 546). Solidarity comes to fruition through “a shared sense of ‘humanness’” (Featherstone, 2012, p. 19) and when “a certain number of states of consciousness are common to all members of the same society” (Featherstone, 2012, p. 20).

Furthermore, the concept of solidarity emphasizes the “interdependence of commitment between individuals and peoples” (Kritikos et al., 2007, p. 73). Cureton (2012) defines the idea of solidarity within a group of people:

Members of the group regard their relationships as valuable in themselves, and it provides further support to the cohesion of the group. Over time, members may even begin to identify themselves with the group, seeing its aims along with their joint projects and the corresponding relationships as part of who they are as persons. (p. 697)

Therefore, solidarity acts as a means of association and purpose among individuals and groups. Ferdman and Kohn (2018) state, “Solidarity binds people together, but it does so without giving absolute priority to the individual or the group,” (p. 546-547). Additionally, solidarity highlights the significance of community, support and connection between individuals (Kritikos et al., 2007). Solidarity can also be a communal exchange

“where everybody sacrifices income for the improvement of the group income,” (Kritikos et al., 2007, p. 84). Acting as a unifying force, the concept of solidarity asserts the notion of “a singular ‘community of us all’” (Featherstone, 2012, p. 37-38) and actively stresses that individuals are inextricably tied and interconnected.

While solidarity starts as a concept or idea, it can transform into shared values and be expressed through solidarity action. More specifically, the notion of solidarity involves collective relationships that are deeply grounded within moral and ethical responsibilities (Ferdman & Kohn, 2018). Van der Zee and Perugini (2006) state, “Solidarity norms often require a willingness to contribute to the common good” (p. 85). Described as a “morally rich concept” (Scholz, 2008, p. 5), solidarity asserts “some form of unity that mediates between the individual and the community and entails positive moral duties” (Scholz, 2008, p. 5). The characteristics of extroversion, agreeableness, conscientiousness, emotional stability and honesty act as integral elements of solidarity behavior and actions (Van der Zee & Perugini, 2006). According to Van der Zee and Perugini (2006), “Individuals high in these traits are characterized by highly internalized norms inclining them toward solidarity, and they tend to use control mechanisms that reduce antisolidary tendencies linked to situation temptations or other traits.” (p. 84) Furthermore, solidarity actively promotes, and is grounded within, the notions of social responsibility, reciprocity and an orientation to social value (Van der Zee & Perugini, 2006). As stated by Ferdman and Kohn (2018), “Most significantly, solidarity is a moral relationship that involves positive obligations” (p. 547). The concept of solidarity can be shared and acted upon by a group of people or society and has the capacity to create and

promote moral and ethical values (Featherstone, 2012). Cureton (2012) explains that solidarity is a “group of people who are cooperating together in support of shared ends and valuing for their own sake the solidary relationships that form on this basis...the shared ends that can unite people in solidarity are their values, ideals, aspirations,” (Cureton, 2012, p. 698). Therefore, the promotion of the theory of solidarity allows individuals to formulate widespread moral values and ethical obligations. Cureton (2012) expands upon this notion:

United by social moral rules that we have established among ourselves, the rules we have developed and maintain are a constitutive part of our solidary relationships with one another; and it is part of being in this sort of solidarity with our comrades that we are presumptively required to follow the social moral rules that join us together. (p. 691)

Through this spread and interchange of values, the concept of solidarity can become a foundational and pivotal aspect of many relationships between individuals, groups and nations. In turn, it is possible to produce moral and ethical standards, which humans can then follow, share and act upon. Within a nation-state, these moral and ethical standards have the capacity to be valued amongst the population and incorporated within institutional policies.

Consequently, these shared moral ideals and ethics can generate “community solidarity, or political integration, enabling further action” (Featherstone, 2012, p. 23). According to Cureton (2012), shared values and social moral rules “can also become constituent parts of the cooperative solidarity of the group as well. Establishing, maintaining and following these rules can become an essential component of the

cooperative activities that hold some groups in solidarity” (p. 702). The value of this concept then allows for the emergence of the action of solidarity, which can be referred to as cooperation (Kritikos et al., 2007). It is possible for individuals, groups, nations and governments to “show solidarity in the sense that they are willing to help others” (Kritikos et al., 2007, p. 74). Therefore, solidary action is determined as a shared duty “reflecting a collective commitment to carry ‘costs’ (financial, social, emotional or otherwise) to assist others,” (Dawson & Jennings, 2012, p. 72). These actions can be categorized into three tiers: carrying the costs of another person “with whom a person recognizes sameness or similarity in at least one relevant respect” (Dawson & Jennings, 2012, p. 73); a communal responsibility to carry the costs of others who are “linked by means of a shared situation or cause” (Dawson & Jennings, 2012, p. 73); and the willingness to sanctify these commitments within legal institutions (Dawson & Jennings, 2012).

Through solidarity, individuals can be motivated “to help one another and to act collectively” (Ferdman & Kohn, 2018, p. 551). However, mutuality and support are essential factors in creating and acting in solidarity (Kritikos et al., 2007). According to Huish (2014), “Even though solidarity is grounded in having deep concern for the needs of others...Solidarity practices are open to mutual benefit and receipt of actions in return for service” (p. 5). With collectivity acting as a grounding force (Kritikos et al., 2007), the action of solidarity is “influenced by the efficiency of the objective of the solidary action and is enhanced by the feelings of mutual exchange (solidarity) within a group” (Kritikos et al., 2007, p. 73). The actions of solidarity can come in many forms: formal,

informal, organized or unprepared, and through a variety of mediums, such as active engagement or support (Cureton, 2012). Cureton (2012) declares, “The cooperative activities undertaken in support of those ends may involve taking steps to promote them, manifesting and showing respect for them, interpreting them in action, honoring them or participating in them,” (p. 699). Furthermore, these acts of solidarity cooperation are not merely “ways of coordinating” group behaviors, but “those in cooperative activities do so freely, on mutually agreeable terms, and each enjoys a basic moral standing” (Cureton, 2012, p. 699). However, the action of solidarity “must not be performed in expectation of reaping future personal benefits” (Kritikos et al., 2007, p. 74). As stated by Kritikos et al. (2007), “Solidarity is a series of collective actions. For collective action to be taken, individuals must be sufficiently motivated to depart from selfishness” (p. 74-75).

While the concept and action of solidarity can be valued and spread within a specific group of people, solidarity can also be produced among different groups (Kritikos et al., 2007). There is no requirement for the concept and action of solidarity to remain within or be limited to a specific region or group of individuals. Huish (2014) asserts:

It is a common mistake to view solidarity as international actions based solely on similarities of culture, language or location...Solidarity can involve a seemingly distant, albeit disconnected, group in one part of the world employing tactics to challenge structures of power that impact the lives of others. (p. 3)

Solidarity has “the potential to reach beyond local clubs, teams, organizations and movements” (Cureton, 2012, p. 705). It is possible for this value and activity to be shared through “ongoing connections” (Featherstone, 2012, p. 5). Cureton (2012) exclaims, “We

may not even know or meet the people with whom we are cooperating...but in general the group knows that they are working with others and know the nature of the cooperative activities in which they are taking part” (p. 699). Rather than remain within the confines of a specific area or set of people, the concept and action of solidarity has the capacity to reach and be shared by humans around the world. Through this interchange of ideas and actions, it is possible to generate new connections and opportunities for learning, which can lead to new ways of understanding. As stated by Van der Zee and Perugini (2006), “A strong orientation toward the welfare of others is likely to change the way people see their relations with others” (p. 83). Furthermore, solidarity can be attributed to “shaping universalizing practices” (Featherstone, 2012, p. 38) with solidarity connections acting as “powerful motivators” (Cureton, 2012, p. 697). Cureton (2012) explains this idea:

When a group has united in solidarity by a set of social moral rules that they have instituted among themselves, the rules often come to play a distinctive social role in the group by figuring in the requirements of what it takes to stand in solidarity with one’s comrades. (p. 702)

Through the spread of solidary values, individuals and groups can create and act upon a set of rules and ethical obligations, which can alter ways of knowing and connecting. Furthermore, this concept has the capacity to influence societal, governmental and international practices and exchanges. Therefore, solidarity can create “new ways of relating” (Featherstone, 2012, p. 5) and generate or reproduce identities among individuals and societies (Featherstone, 2012). Cureton (2012) states, “The laws of our society are our laws, and the social moral rules here are our rules, so these things deserve

some allegiance as part of our valuable kind of solidarity” (p. 705). Considered a transformative and inventive method of connection between people, places and values, solidarity can “produce new ways of configuring political relations and spaces” (Featherstone, 2012, p. 6). Featherstone (2012) asserts, solidarity is “a creative process which speaks to the bringing together of relation and trajectories. This positions solidarity as actively generating and shaping shared values and identifications” (p. 23). Therefore, the values and actions of solidarity can shape and form identities of groups, people and policies (Featherstone, 2012), which can foster new connections and possibilities of mutual exchange. Furthermore, the concept, value and action of solidarity is a “transformative process which works through the negotiation and renegotiation of forms of political identification” (Featherstone, 2012, p. 37) and “can reshape the terrain of what is politically possible and what counts or is recognized as political. This contestation produces new ways of generating political community and different ways of shaping relations between places” (Featherstone, 2012, p. 7). Therefore, the spread of the notion and practice of solidarity can construct lasting and mutually beneficial “relations between places, activists, diverse social groups” (Featherstone, 2012, p. 5).

Theory of Cosmopolitanism

Originating from the ancient Greek expression for ““citizen of the world”” (Kendall, Woodward & Skrbis, 2009, p. 1), the concept of cosmopolitanism stresses that humans have “a receptive and open attitude towards each other” (Kendall et al., 2009, p. 1). Furthermore, the theory emphasizes the idea that all humans, no matter their

geographical position or origin, are innately linked and connected to one another. As stated by Kendall et al. (2009), “The idea of cosmopolitanism has historically been a way of addressing the complexities surrounding the question of belonging: in particular, the tension between belonging to a local community as opposed to a wider world” (p. 34). Therefore, cosmopolitanism stresses that all individuals strive to “go beyond the strong pressure to privilege those nearest to him or her (family, tribe or nation), and endeavors to see the value of the other, and to work towards the possibility of connection and dialogue with the other” (Kendall et al., 2009, p. 1). Cosmopolitanism emphasizes that individuals recognize and value the concerns of others, even those who are outside a person’s immediate circle, social group, nation-state, etc. Appiah (2006) further explains the concept of cosmopolitanism:

Cosmopolitans...regard all the peoples of the earth as so many branches of a single family, and the universe as a state, of which they, with innumerable other rational beings, are citizens, promoting together under the general laws of nature the perfection of the whole, while each in his own fashion is busy about his own well-being. (p. xv)

At its core, the theory of cosmopolitanism asserts that all individuals are fundamentally equal (Brown & Held, 2010). In addition, the moral characteristics of cosmopolitanism highlights and emphasizes “the fundamental needs and interests of individual human beings, and of all human beings” (Pogge, 2008, p. 184), while abiding by the principles of equality, personal responsibilities and compensation, priority of fundamental interests and mutual advantage (Brown & Held, 2010). The principle of equality highlights that inequities “have to be justifiable in ways that cannot reasonably be rejected by those who get least” (Brown & Held, 2010, p. 102). The principle of personal responsibilities and

compensation notes that the personal outcome of individuals is often dependent on voluntary choices. However, individuals cannot always avoid certain hardships and should be remunerated. The third principle of fundamental interests stresses that all necessary interests of individuals, such as security, health, sanitation and shelter, should be safeguarded and favoured over non-vital interests (Brown & Held, 2010). The principle of mutual advantage “is one of collective rationality” (Brown & Held, 2010, p. 103) where the departure from any other principles must be of the “prospective advantage of everyone” (Brown & Held, 2010, p. 103).

Correspondingly to the concept of solidarity, the theory of cosmopolitanism highlights the interconnectedness of people around the world. Cosmopolitanism emphasizes “that the world is an interconnected and interdependent community and that our moral responsibility is therefore, correspondingly, a globalized and universal concern – a concern ‘whose primary allegiance is to the community of human beings in the entire world’” (Brown & Held, 2010, p. 3). According to the theory of cosmopolitanism, humans are the “ultimate units of concern...rather than, say, family lines, tribes, ethnic, cultural, or religious communities, nations, or states” (Pogge, 2008, p. 175). Furthermore, cosmopolitanism stresses that individuals are all equal “in their moral standing and that this moral standing applies to everyone everywhere, as if we are all citizens of the world” (Brown & Held, 2010, p. 2). This equal assertion of moral concern can be applied to subjective concerns, such as happiness and evasion of pain, or objective concerns, such as access to human necessities, opportunities and resources (Pogge, 2008). However, this notion of equality does not eliminate local and national responsibilities (Brown & Held,

2010). The concept of cosmopolitanism “does insist that there are universal commitments to respect the moral worth of individuals everywhere” (Brown & Held, 2010, p. 2). As stated by Brown and Held (2010), “A cosmopolitan commitment to the individual translates into an impartial commitment that can respect all human beings equally, despite where one is born and regardless of what communal association that person happens to be placed in” (p. 2). In practice, the idea of belonging is “based on multiple and overlapping levels” (Kendall et al., 2009, p. 38). Therefore, it is possible for humans to be connected through “core sociological concerns with class and status groups, and others of which may connect to more nebulous sense of shared identity” (Kendall et al., 2009, p. 38).

Described as a “moral and political project” (Brown & Held, 2010, p. 2), cosmopolitanism highlights the significance of morality among individuals (Appiah, 2006). The concept of cosmopolitanism can be considered “a necessary stage in the development of the idea of right” (Fine, 2007, p. 136). Kendall et al. (2009) further explain this concept:

A key component of the cosmopolitan ethic is the capacity individuals have to imagine bonds with others, to honour commitments which bind them to fellow humans and to realize the idea that each individual is called to a higher social purpose through their associations with others. (p. 151-152)

Therefore, cosmopolitanism stresses the importance of human connection, collaboration, and “requires us to feel about everyone in the world what we feel about our literal neighbours” (Appiah, 2006, p. 157). The theory of cosmopolitanism is grounded within the assertion of shared values and ethical obligations. Kendall et al. (2009) state, “It has

been common to think of cosmopolitanism as a type of social integration – a type of belonging – which is guaranteed by values” (p. 35). Cosmopolitanism acts as an ethical system and procedure (Kendall et al., 2009), which stresses that humans have moral and ethical responsibilities to each other. Appiah (2006) states, “We have obligations to others, obligations that stretch beyond those to whom we are related by the ties of kith and kind, or even the more formal ties of a shared citizenship” (p. xv). Brown and Held (2010) defend this idea:

In the most basic form, cosmopolitanism maintains that there are moral obligations owed to all human beings based solely on our humanity alone, without reference to race, gender, nationality, ethnicity, culture, religion, political affiliation, state citizenship, or other communal particularities. (p. 1)

Regardless of social or geographical classification, all humans are endowed with ethical and moral obligations, which acknowledges the “notion of common humanity” (Brown & Held, 2010, p. 1).

Within the realm of ethical and moral obligations, cosmopolitanism emphasizes the notion of natural duties. According to the theory of cosmopolitanism, individuals are endowed with natural duties “to give possible aid and protected in specified cases of need” (Pogge, 2008, p. 177). Rawls (1972) explains the concept of natural duties:

The duty of helping another when he is in need or jeopardy, provided that one can do so without excessive risk or loss to oneself; the duty not to harm or injure another; and the duty not to inflict unnecessary suffering. (p. 114)

However, natural duties are not limited to individuals in the same society or reserved for a specific group of people “cooperating together in a particular social arrangement” (Rawls, 1972, p. 115). Instead, natural duties act as an obligation to justice and are allocated to all individuals around the world (Rawls, 1972). Rawls (1972) asserts, “If the basic structure of society is just, or as just it is reasonable to expect in the circumstances, everyone has a natural duty to do his part in the existing scheme” (p. 115). Therefore, cosmopolitanism emphasizes that “all persons stand in certain moral relations to one another: we are required to respect one another’s status as ultimate units of moral concern – a requirement that imposes limits on our conduct” (Pogge, 2008, p. 175). It is very much in line with what José Martí (2007), a 19th century Cuban intellectual said, that “happiness exists on earth, and it can be won by means of the prudent exercise of reason, the knowledge of universal harmony, and the constant practice of generosity” (p. 51). Martí is an incredibly important intellectual guide for both Cuban society, and government, and here it is clear the value of generosity towards others is one of his key values that is put into policy practice in Cuba today through its international cosmopolitan outreach.

Furthermore, natural duties can be separated into positive duties and negative duties. Positive duties are described as an individual’s obligation to act, whereas negative duties explain an individual’s duty to avoid harming another person (Pogge, 2005). Singer (1965) asserts, “A negative duty is a duty not to do something, a duty of omission. A positive duty is a duty to do something, and cannot be fulfilled by inaction” (p. 98-99). Therefore, positive duties are obligations to “do something good for another” (Rawls,

1972, p. 114) and “assist those in need” (Gilbert, 2005, p. 539). In contrast, negative duties act upon the premise of individuals not doing “something that is bad” (Rawls, 1972, p. 114). This can include the refusal of enforcing or obliging to unfair institutional regulations (Pogge, 2008), which “leave human rights unfulfilled without making reasonable efforts to aid its victims and to promote institutional reform” (Gilbert, 2005, p. 539).

The concept of cosmopolitanism views human rights as “minimal standards of our age” (Pogge, 2008, p. 25) that should be fulfilled through an institutional design. Specifically, an institutional order must prevent causing harm or worsening “the situation of others” (Pogge, 2008, p. 15). However, cosmopolitanism equally refutes the notion that “when something contributes to improving people’s situation, then it is benefiting, not harming them” (Pogge, 2008, p. 23). For example, top-down disaster from the Global North to the Global South can reproduce structures of inequity through short term interventions, rather than addressing deeper structural causes of poverty. Within an institutional design, there is a capacity to benefit individuals, while correspondingly inflicting harm upon them. While it can be argued that an institutional order is abiding by the positive duty to “help the badly off” (Pogge, 2008, p. 26), this notion focuses on negative obligations and, more specifically, the “amount of harm one is responsible for by cooperating in the position of an unjust institutional order” (Pogge, 2008, p. 26). Thomas Pogge (2008) emphasizes, “An institutional arrangement can harm a group even if the transition to this arrangement diachronically benefits this group. The diachronic benefit may not justify this new arrangement if its processor, over which it constitutes an

improvement, was morally unacceptable” (Pogge, 2008, p. 23). Correspondingly, institutions have the ability to refute obligations to avoid causing harm and suffering.

Thomas Pogge (2008) explains:

We are not required to do so because in a state of nature an even larger percentage of humankind would live as miserably as you are living now, or worse. So long as you are no worse off than many in the baseline world would be, you have no valid complaint against the institutional order we are imposing on you. (Pogge, 2008, p. 24)

However, it is possible to measure the infliction of harm within an institutional order through the selection of an alternate design, which can act “as the uniquely appropriate baseline” (Pogge, 2008, p. 24). The alternative design must demonstrate that it does not generate “comparable human right deficits or other ills of comparable magnitude” and, therefore, the human rights deficits are “reasonably avoidable” (Pogge, 2008, p. 26). Therefore, an institutional order can be considered harmful insofar as “its design can be shown to be unjust by reference to a feasible alternative design” (Pogge, 2008, p. 25). In sum, Pogge’s argument demonstrates how top-down aid and disaster capitalism may cause harm to individuals, even though it claims to do otherwise.

Recognizing that institutional design can cause harm when trying to do good, the moral obligations and ethical duties that are part and parcel of cosmopolitanism can become a normative set of methods and procedures in disaster management.

Cosmopolitanism “is not just about ‘feelings’ or ‘attitudes’, but the structures, networks and materials which allow such dispositions to seem appropriate in specific spaces and times, and which consequently make it likely to be adopted in a widespread manner”

(Kendall et al., 2009, p. 157). Emphasizing the idea of openness, the tangible formulation of cosmopolitanism is “richly interwoven in the social fabric, deeply felt by members, and an inclusive, ethically-based practical response to the social fact of globality” (Kendall et al., 2009, p. 149). While cosmopolitanism starts as a concept or idea, it is possible to become a method of practice through intercommunal dialogue and participation. Fine (2007) asserts, “Cosmopolitan being and cosmopolitan consciousness are two sides of the same experience and are reunited through political action” (p. 134). The concept of cosmopolitanism is an outlook or consciousness, which is used by individuals to analyze and interpret the world around them. According to Appiah (2006), “It begins with the simple idea that...we need to develop habits of coexistence: conversation in its older meaning, of living together, association” (p. xix). However, the action or condition of cosmopolitanism include the practices and sets of rules that guide and govern our reality (Fine, 2007). Fine (2007) emphasizes, “There is a sense in which the cosmopolitan condition is ‘out there’ in the world...In this regard cosmopolitanism is not just an abstract ideal, but an evolving set of social forms,” (p. 136).

Therefore, cosmopolitanism provides individuals with the opportunity to act upon ideals and participate in “mature engagement with others inside and outside the legal and social communities to which we belong” (Commissiong, 2012, p. 33). Furthermore, this theory allows individuals to become “critically engaged in the political and cultural worlds about them and beyond” (Commissiong, 2012, p. 33). Effectively, a cosmopolitan “must be receptive to the cultural outputs of others, and indeed willing to become engaged with them. This involves a conscious attempt to be familiar with people, objects

and places that sit outside one's local or national settings" (Kendall et al., 2009, p. 112-113). Cosmopolitanism rejects the idea of people living "without local, immediate, concrete or exclusive bonds" and should not be viewed as a "dismissal of the local, singular and familiar" (Kendall et al., 2009, p. 152). Instead, this concept strives for all individuals to be "friends of humanity" (Fine, 2007, p. 136). Furthermore, human connections should not finitely end "at the borders of the nation state," but have the capacity to create a sense of "moral universalism" (Kendall et al., 2009, p. 152). While cosmopolitanism recognizes the differences of humans across the globe, the theory emphasizes the importance and value of learning, connecting and understanding from one another. Appiah (2006) describes this notion:

We take seriously the value not just of human life but of particular human lives, which means taking an interest in the practices and beliefs that lend them significance. People are different, the cosmopolitan knows, and there is much to learn from our differences. (p. xv)

Through conversation and moral understanding, cosmopolitanism unlocks the possibility of international exchange and understanding. Instead of focusing on what divides specific nation-states or groups of individuals, cosmopolitanism emphasizes that "all cultures have enough overlap in their vocabulary of values to begin a conversation" (Appiah, 2006, p. 57). Differences are regarded as "an opportunity for connection rather than as a pretext for separation" (Kendall et al., 2009, p. 1).

Furthermore, it is possible for the values and actions of cosmopolitanism to create and emerge “from bonds of solidaristic sentiments” (Kendall et al., 2009, p. 152).

Kendall et al. (2009) state:

Social solidarity cosmopolitanism asks members reflexively to reconsider local loyalties as the primary basis for social and cultural interaction. It is founded upon the development of shared connections, material linkages and ethical reflexivities which seek inspiration beyond the local and national...The result of such developments leads to the acknowledgement of, engagement with and possibly incorporation of social groups previously considered to represent the other. (p. 149)

Therefore, this cosmopolitan sense of morality and empathy acts as “a basis of critical interaction and solidarity” (Commissiong, 2012, p. 33). Through this understanding of cosmopolitanism, it is possible for humans to recognize their connection to each other within communities and internationally, which, in turn, can foster understanding, solidarity and cooperation. It is a strong normative basis for South to South Cooperation, much in the way that Cuba chooses to engage with its neighbours.

Solidarity, Cosmopolitanism and Cuba’s Disaster Management Model

Solidarity and cosmopolitanism provide this research with two differing, but complementary perspectives. The concept of solidarity stresses an obligation of concern for a specific community, while cosmopolitanism highlights an “unconfined orientation towards humanity” (Derpmann, 2009, p. 304). Even though solidarity and cosmopolitanism have differing scopes, the two ideologies are still connected and “closely related” (Derpmann, 2009, p. 303). Solidarity and cosmopolitanism both

“describe ideals of human thought and action. They refer to the care and the moral responsibility for the rights or welfare of others” (Derpmann, 2009, p. 304). Furthermore, solidarity has the capacity to “accommodate forms of moral inclusion. In this understanding, solidarity relations meet an essential feature of cosmopolitanism, insofar as they transcend the moral relevance of national belonging” (Derpmann, 2009, p. 313). Therefore, the use of these two ideological frameworks will allow for a more comprehensive review and explanation of the moral obligations entrenched within Cuba’s national and international response strategies.

In this thesis, the correlation between Cuba’s disaster management model, solidarity and cosmopolitanism will be outlined. This research will explore the correlation between Cuba’s disaster preparedness and response procedures and the elements of solidarity and cosmopolitanism, which include humanism, morality and unity. More specifically, this research will demonstrate that Cuba’s disaster management system incorporates and stresses the importance of collectivity, solidary action and helping others in both local and international settings through cosmopolitan commitments to minimal duties. In applying the frameworks of solidarity and cosmopolitanism, it is possible to fully appreciate what relief measures are taken, how they are employed as well as why these procedures are carried out in Cuba and abroad. By highlighting the significance of solidarity and cosmopolitanism within Cuba’s disaster management model, the key takeaways and recommendations for other countries and disaster management organizations can then be explored.

Chapter 3: Methodology

Field Research in Cuba

While existing literature provides general information on Cuba's preparedness and response processes, there is an overall lack of contemporary research on the Cuban disaster management model. Therefore, it was necessary to conduct field research and collect data in Cuba to generate a more nuanced understanding of the country's practices, provide new insight regarding the significance of solidarity and cosmopolitanism within the disaster management system and fill in gaps in current literature.

In order to conduct field research in Cuba, I submitted an application to the Social Sciences and Humanities Research Ethics Board (REB). The submission outlined the proposed project and methods. The application was submitted to REB on June 19, 2018 and approved on September 4, 2018.

Field research was conducted in Cuba from October 11, 2018 to December 1, 2018. In total, 52 days were spent in Cuba. During this time, I was primarily based in Havana, which allowed me to create a wide social network of interview subjects and collaborators. Furthermore, it was possible to access information through Havana-based institutions, such as the University of Havana, José Martí National Library and the Cuban Institute of Meteorology. However, I also travelled to Viñales and Las Terrazas, which are both located in western Cuba. I travelled to Viñales, a town in Pinar del Río Province,

on Thursday, November 15, 2018. In addition, I visited Las Terrazas, an ecological reserve in Artemisa Province, on Saturday, November 17, 2018.

While in Havana, I collaborated with the Latin American Faculty of Social Sciences (La Facultad Latinoamericana de Ciencias Sociales) (FLACSO-Cuba), a research institute located in the Municipality of Playa, Havana. FLACO-Cuba's main objective is "to develop research and postgraduate teaching on Cuban society and in particular on its social development" (FLACSO, 2019, para. 1). Affiliated with the University of Havana, FLACSO-Cuba has a longstanding relationship with the International Development Studies Department at Dalhousie University.

Overall, field research in Cuba was very rewarding and fulfilling. The vast majority of people I met in Cuba, such as the professors at FLACSO-Cuba and the University of Havana, government officials and the local population, were all extremely welcoming and eager to speak with me about Cuba's disaster management system. People were available to help me navigate and adapt to life in Cuba. This network of people not only enhanced my knowledge of the Cuban disaster management model, but also provided me with an enriched and first-hand understanding of Cuban solidarity and hospitality.

However, fieldwork in Cuba was not without its own unique challenges. Before departure to Cuba, the approach and scope of this study slightly changed. I intended to initially travel to Las Tunas, a province located in the central-eastern region of Cuba, and

then conduct research in Havana, Las Terrazas and Viñales. In order to study and collaborate with the university, conduct interviews and visit government institutions in Las Tunas, it was necessary to apply for and receive a student visa before my departure to Cuba. Unfortunately, I was unable to acquire a student visa while in Canada. Alternatively, I travelled to Havana and, with the help of FLACSO-Cuba, I applied and received a student visa while in Cuba. However, I was unable to schedule a time to conduct research with my contacts in Las Tunas.

Furthermore, my fluency in Spanish posed an ongoing challenge in my research. While I took Spanish classes in my undergraduate and graduate studies, I would not consider myself fluent in the language. When possible, I mitigated any communication barriers with participants through the use of an interpreter. However, I was unable to arrange an interpreter for seven interviews. Instead, I wrote my questions in Spanish and took notes during the interviews.

Research Methods

In order to clearly and definitively answer the research question, a set of primary research methods were used in this study. Due to the exploratory nature of this research study, I incorporated and applied the following qualitative research methods: a scoping analysis of primary and secondary literature, semi-structured interviews and informal observations. Hammarberg, Kirkman and de Lacey (2016) state, “Qualitative methods are used to answer questions about experience, meaning and perspective” (p. 499).

According to Maxwell (2012), qualitative research is used to understand “the meaning, for participants in the study, of the events, situations, and actions they are involved with, and of the accounts that they give of their lives and experiences” (p. 221). Furthermore, qualitative methods are utilized to comprehend the context and processes of these events and actions, but also understand how context influences the actions of participants (Maxwell, 2012). Maxwell (2012) explains:

In a qualitative study, you are interested not only in the physical events and behavior taking place, but also in how the participants in your study make sense of these and how their understandings influence their behavior. The perspectives on events and actions held by the people involved in them are not simply their accounts of these events and actions, to be assessed in terms of truth or falsity; they are part of the reality that you are trying to understand, and a major influence on their behavior. (p. 221)

In this research, analysis of literature provides an understanding on the concepts of solidarity and cosmopolitanism. Furthermore, the review of literature allows for further context on the processes and policies surrounding Cuba’s disaster management model. Additionally, semi-structured interviews provide the opportunity to speak with individuals who participate, contribute and are directly involved in Cuba’s disaster management system. In these semi-structured interviews, it is possible to learn more about the country’s preparedness and response strategies, but also dive deeper and reflect on the importance of solidarity and cosmopolitanism within Cuba. Informal observations also provide the opportunity to examine the impacts of natural disasters, and witness firsthand the significance of solidarity and cosmopolitanism within Cuban society. Therefore, through the application of analysis of primary and secondary literature, semi-structured interviews and informal observations, it was possible to uncover the characteristics and

nuances of Cuba's disaster management model, which provided the opportunity to determine the effectiveness, value and capabilities of the system.

Analysis of Literature

Qualitative documents were sourced and examined in this research study. Qualitative documents include “public documents (e.g., newspapers, minutes of meetings, official reports) or private documents (e.g., personal journals and diaries, letters, e-mails)” (Creswell, 2009, p. 181). Through the collection and analysis of literature, it is possible for the researcher to “obtain the language and words of participants” and “can be accessed at a time convenient to research – an unobtrusive source of information” (Creswell, 2009, p. 180).

Before conducting field research in Cuba, secondary sources that focused on the concepts of solidarity and cosmopolitanism and general information on Cuba's disaster management system were analyzed. The secondary sources included journal and news articles, books and academic studies. This provided a foundational knowledge of Cuba's disaster preparedness and response practices. Furthermore, I also acquired an understanding of the concepts of solidarity and cosmopolitanism, which act as theoretical frameworks for this study. Through the analysis of these secondary sources, I was able to shape my fieldwork, research question and thesis statement.

During my field research in Cuba, I examined a variety of academic and policy sources, which offered more in-depth, detailed and thorough view of natural disaster preparedness and response measures in the country. Furthermore, I was also presented with additional, and more country-specific, information regarding theoretical frameworks of this research, specifically the concept of solidarity. In Cuba, I analyzed government documents and statistics, studies, books and news articles. I conducted research at FLACSO-Cuba, the Rubén Martínez Villena Central Library at the University of Havana and the José Martí National Library. In meetings with interview subjects, I also received additional information in the form of books, pamphlets, studies and PowerPoint presentations.

Semi-Structured Interviews

In addition to analysis of literature, I conducted 23 semi-structured interviews in Canada and Cuba. According to Longhurst (2016), “Although the interviewer prepares a list of predetermined questions, semi-structured interviews unfold in a conversational manner offering participants the chance to explore issues they feel are important” (p. 143). Semi-structured interviews are “useful when participants cannot be directly observed”, “provide historical information” and “allows researcher control over the line of questioning” (Creswell, 2009, p. 179).

Recruitment and inclusion criteria for the research participants involved individuals with professional work experience in project management and emergency

disaster response. Individuals, groups and organizations that are integral to Cuba's disaster preparedness and response processes. Professors or researchers who can provide a theoretical and moral analysis of Cuba's disaster management model.

Participants were recruited through chain-referral sampling (snowball sampling), which removed the need for any screening processes. With the support of FLACSO-Cuba and the Department of International Development Studies at Dalhousie University, it was possible to contact and conduct interviews with individuals who are essential to disaster preparedness and response measures in Cuba.

In order to fully understand and appreciate Cuba's disaster management processes, I spoke to many individuals with differing backgrounds. I conducted interviews with professors at FLACSO-Cuba and the University of Havana, current and former government officials, a health care professional, a member of an environmental organization and local people in Cuba. Interviews ranged in length from 26 minutes to 150 minutes. All interview subjects provided free and informed oral and/or written consent to participate in this research study.

In the interviews, I asked each participant if I could 1) record the conversation and 2) use their quotes and/or opinions in my thesis. Participants were able to orally consent or oppose to these questions. Of the 23 interview subjects, one participant wished to not have their interview recorded. Alternatively, I took notes and they orally consented to the inclusion of their opinions in the final manuscript. All participants were given an

alias in the final manuscript. In the interviews, participants were asked a series of questions pertaining to Cuba's disaster management processes and the concepts of solidarity, cooperation and cosmopolitanism. All audio recordings and written transcriptions are saved on an encrypted hard drive, cellular device and USB keys.

Table 1 List of interviews.

Date	Pseudonym	Profession	Location
September 27, 2018	Devon Smith	Director of Emergency Management	British Columbia
October 14, 2018 (Interview 1)	Emilio Sánchez	Director of Geology, Ministry of Energy and Mines	Havana
October 17, 2018	Julio López	PhD in Economic Sciences, FLACSO-Cuba	Havana
October 19, 2018	Mora González	PhD in Education Sciences, FLACSO-Cuba	Havana
October 23, 2018 (Interview 1)	Bárbara Hernández	MsC., Spanish Professor, University of Havana	Havana
October 23, 2018	Elianne Álvarez	PhD in Education Sciences, FLACSO-Cuba	Havana
October 29, 2018	Alberto Díaz	Specialist in Cuba's Civil Defense, University of Havana	Havana
October 30, 2018	Julietta Fernández	Lic. in Geography, FLACSO-Cuba	Havana
October 31, 2018	Aleida Ruiz	Self-Employed	Havana
October 31, 2018 (Interview 2)	Bárbara Hernández	MsC., Spanish Professor, University of Havana	Havana
October 31, 2018	Emely Martínez	PhD in Economic Sciences, FLACSO-Cuba	Havana
November 1, 2018	Diana Rodríguez	PhD in Economic Sciences, FLACSO-Cuba	Havana
November 2, 2018	Omar Castillo	Specialist of the Direction of Environmental Education and Community Work, State Working Group of the Havana Bay	Havana
November 5, 2018	Mairelys Reyes	Legal Assistant	Havana
November 6, 2018	Gabriella Gómez	MsC. in Social Development, FLACSO-Cuba	Havana

November 9, 2018	Valentina Torres	MsC. in Psychology, FLACSO-Cuba	Havana
November 13, 2018	Reinaldo Ramírez	Head of the National Risk Assessment Group, Environmental Agency in the Ministry of Science, Technology and Environment	Havana
November 13, 2018	Ricardo Santos	PhD in Education Sciences, FLACSO-Cuba	Havana
November 17, 2018	Ernesto Martín	Tour Guide and Interpreter	Artemisa
November 17, 2018	Leon Vélez	Former Farmer	Artemisa
November 17, 2018	Ramón Pérez	Medical Doctor	Artemisa
November 20, 2018	Hugo Romero	Former Minister of Construction	Havana
November 21, 2018	Madelin Suárez	Chief of the National Weather Forecast Centre, Institute of Meteorology	Havana
November 22, 2018	Marcia Peña	Radiology Technician	Havana
November 24, 2018 (Interview 2)	Emilio Sánchez	Director of Geology, Ministry of Energy and Mines	Havana

Informal Observations

In this study, informal observations were also employed to document life and the significance of solidarity within Cuba, evaluate the processes used in the Cuban disaster management system and record any relevant or interesting anecdotes. In applying this method, it is possible to have “first-hand” experiences, “record information as it occurs” and “unusual aspects can be noticed during observation” (Creswell, 2009, p. 179).

Observations were logged and organized by date in a field journal. A total of 19 entries were recorded in the field journal. The field journal entries were not limited to specific interviews or events and included documentation of chance occurrences relating to this

research, general remarks and my own experiences in Cuba. The field journal is saved as an online document and stored on an encrypted hard drive and USB keys.

Audio-visual materials (Creswell, 2009), specifically photographs and videos, were also used to document and observe life in Cuba and disaster related impacts and response processes. The collection of these materials act as an “unobtrusive method of collecting data” and “provides an opportunity for participants to directly share their reality” (Creswell, 2009, p. 180). Humans were not the primary focus of these observation photos. However, the photos are used to assess the level of reconstruction in post-disaster areas, disaster-related challenges and highlight the influence of solidarity in Cuban culture and daily life. Photos were captured on a cellular device and DSLR camera and stored on a password-protected cellular device, SD memory card, encrypted hard drive and USB keys. In order to highlight and categorize disaster impacts, preparedness and responses measures in specific regions of Cuba, photos are filed and organized by the area in which they were taken. A coding method was also used to thematically categorize the photographs and videos. While most of the photos used in this study were captured through my own personal research and observation, this study also includes photographs and videos that were obtained from external sources. During my field research in Cuba, I acquired material through secondary sources, such as books, articles and online resources. I also received primary photographs and videos from interview subjects.

Analysis of Qualitative Data

In this study, the qualitative data was analyzed through two methods: scoping and coding. Before conducting field research, I utilized the scoping method to determine the presence of solidarity and cosmopolitanism within Cuba and establish the key elements of Cuba's disaster management system. Used in the examination of new phenomena, a scoping study is "an approach to reviewing literature" (Arksey & O'Malley, 2005, p. 19), which maps "rapidly the key concepts underpinning a research area and the main sources and types of evidence available" (Wilson, 2014, p. 76). A scoping study provides the capacity to search for a variety of relevant concepts and keywords in a short timeframe (Arksey & O'Malley, 2005). Furthermore, this method "makes it possible to identify the gaps in the evidence base, as well as summarizing and disseminating research findings" (Arksey & O'Malley, 2005, p. 30).

All data materials (primary and secondary literature, interview transcriptions, field journal observations, photographs and videos) collected during fieldwork were organized and examined through the coding method. The coding method provides the capacity to foster meaning and critical reflection on a topic of focus. A categorizing strategy, the purpose of coding is "not to produce counts of things but to 'fracture' the data and rearrange it into categories that facilitate comparison between things in the same category and between categories" (Maxwell, 2012, p. 237). More specifically, data is coded into organizational categories, which are "broad subjects or issues that you establish prior to your interviews or observations" (Maxwell, 2012, p. 237). As stated by

Maxwell (2012), “Organizational categories function primarily as ‘bins’ for sorting the data for further analysis. They may be useful as chapter or section headings in presenting your results” (p. 237). In this research, data materials were coded and categorized by themes of interest: personal anecdotes, challenges and limitations, disaster diplomacy and international strategies, formal procedures, semi-formal procedures, informal procedures, lessons, takeaways and recommendations, and solidarity. Each theme was given a designated colour. When reviewing literature, interview transcriptions or field journal entries, sections were highlighted with a specific colour, whereas photographs and videos were given a coloured tab to indicate the present themes. All data materials were then organized into folders based on the coded colour and theme. In using the coding method, it was possible to effectively compile and sort data materials into themes of interest. This allowed for the materials to be efficiently examined for further analysis, meaning and reflection.

Table 2 Qualitative data code.

Code	Theme
Red	Personal Anecdotes
Orange	Challenges and Limitations
Yellow	Disaster Diplomacy and International Strategies
Green	Formal Procedures
Grey	Semi-Formal Procedures
Blue	Informal Procedures
Purple	Lessons, Takeaways, Recommendations
Pink	Solidarity

Chapter 4: Findings and Analysis

Findings

It is important to note that Cuba's disaster management system—built over six decades—is extremely complex and multilayered. Therefore, this chapter seeks to untangle the complexities of the Cuban disaster management model. In this section, Cuba's disaster management procedures are organized into three categories: formal, semi-formal and informal. In this context, formal methods include government-led practices, semi-formal methods are defined as procedures run by community-based organizations and informal methods involve interactions between individuals. This section also includes Cuba's disaster diplomacy and international response strategies, as well as the challenges and limitations of the disaster management model.

Formal procedures. The DCN acts as the driving force of Cuba's formal preparedness and response measures with its authority and responsibilities included within law (A. Díaz, personal communication, October 29, 2018). Díaz emphasizes, “We can say that the civil defense in Cuba is strong because it is a state policy. Also, the close relation between the army and the population. Last, I will say that the wide representation of the population in these structures” (personal communication, October 29, 2018). The DCN is defined as “a state-run system whose main function is to safeguard the Cuban population and their social and economic achievements in face of any type of natural or other risks” (Llanes Guerra, 2010, p. 12). It is led by the President of the Council of

Ministers (Castellanos Abella & Wisner, 2019), while “the presidents of the provincial and municipal assemblies...are responsible for heading civil defense in their respective territories” (Llanes Guerra, 2010, p. 12).

The main focus and foundation of the DCN, and the overall disaster management model, is the preservation of human lives. According to Ruiz, “Human lives are the most important things for our country, for our government” (personal communication, October 31, 2018). In times of disaster, protecting human lives is Cuba’s primary concern, while the preservation of material items is considered secondary (B. Hernández, personal communication, October 23, 2018). Díaz says the objective of the DCN is “to protect and save human lives...that’s the number one priority” (personal communication, October 29, 2018). Sánchez affirms this idea, “They do everything they can to avoid casualties...Here, if somebody dies, it’s big news. It’s something outstanding. It’s something really strange. The value of life here is very important for our culture” (personal communication, November 24, 2018).

In order to safeguard the population, disaster preparedness and risk reduction act as fundamental elements and are rooted within Cuba’s overall disaster management system. Within the country, “disaster risk reduction is a priority for the Cuban government, as can be seen in its vast legal framework and structural and educational actions that positively impact social, economic and safety indicators of the population” (Llanes Guerra, 2010, p. 12). In 2005, the DCN established the use of Risk Reduction Management Centres (RRMC) (Llanes Guerra, 2010). With centres located throughout

Cuba (Llanes Guerra, 2010), the main objective of the RRMC is to “implement vulnerability reduction and any other local transformation that can enhance risk reduction” (Castellanos Abella & Wisner, 2019, p. 17). Working under the direction and supervision of the DCN (Llanes Guerra, 2010), the RRMC assemble information for “risk studies, facilitate the control of vulnerability and create a culture of risk perception in the population and the authorities” (Llanes Guerra, 2010, p. 9). Additionally, the RRMC are tasked with making information available to “different institutions, organizations and local actors for purposes of knowledge, learning, feedback and exchange of tools” (Llanes Guerra, 2010, p. 17).

Furthermore, every May – before the start of the hurricane season – (Oxfam America, 2004) the DCN organizes “Meteoro,” a two-day training exercise (E. Kirk, 2017) for all Cuban citizens (Bermejo, 2006). During “Meteoro,” the entire population has the opportunity to participate through their schools (E. Sánchez, personal communication, November 24, 2018), workplaces, neighbourhoods and institutions (R. Santos, personal communication, November 13, 2018). Citizens participate in exercises, which involve considering and reacting to hypothetical disaster-related situations (Oxfam America, 2004). In addition, Cuban officials and experts evaluate the risks and deficiencies within communities (Bermejo, 2006). Bermejo (2006) states, “These exercises anticipate a variety of potential disasters and engage members of all communities in preparatory tasks to protect health and hygiene in workplaces, schools, and elsewhere,” (p. 16). Additionally, Cubans prepare their communities for the

upcoming hurricane season, which includes mitigating damage (such as cutting trees and fortifying dams) (Bermejo, 2006).

While “Metoro” is a national exercise, each institution (including hospitals, government offices, and research centres) conducts their own analysis and exercises, which suits their specific needs and potential risks. Furthermore, all institutions have their own procedures to reduce risks and mitigate damage (A. Díaz, personal communication, October 29, 2018). For example, according to Díaz, there are three defense and reduction brigades at the University of Havana, who prepare and respond to natural disasters and armed confrontations (personal communication, October 29, 2018). In preparation for an impending storm, one of the brigades secures the equipment at the university, such as computers and tables. At the university, the first day of “Metoro” is dedicated to analysis. The director and deans of the university discuss the actions completed that year and what else could be done in preparation for the upcoming hurricane season. The second day includes cleaning the campus and reducing risks, including clearing garbage and cutting down branches. Furthermore, the university conducts practical exercises. For instance, evacuations and rescues are practiced (A. Díaz, personal communication, October 29, 2018).

To protect the population and economy in times of disaster (Gaceta Oficial de la República de Cuba, 1997), Cuba implemented a thorough four-phased plan of action: information, alert, alarm and recovery (E. Kirk, 2017), and each stage is declared by the DCN (E. Sánchez, personal communication, November 24, 2018). Before a hurricane

reaches Cuba, information is communicated from the government to the general population. Once alerted, the at-risk population is mobilized and evacuated. When the hurricane arrives, the government, organizations and media remain in constant contact with the population through state-news and radio to provide storm updates. After the hurricane, Cuba enters the recovery phase. Damage is assessed, and recovery, cleaning and rebuilding strategies are organized and implemented (E. Kirk, 2017).

In Cuba, mass evacuations are a common and integral component of the overall preparedness and response system. For example, as a response to Hurricane Ike in 2008, an estimated 2.6 million Cubans were evacuated (Sánchez Miranda & Choonara, 2010, p. 328) and almost 350,000 people were evacuated in 2012 for Hurricane Sandy (Castellanos Abella & Wisner, 2019, p. 20). According to Aguirre (2005), “Cuba has an excellent record when it comes to disaster preparedness and response involving warning and evacuation...governmental control of the population is used very effectively to minimize the potential morbidity and mortality of hurricanes and tropical storms” (p. 55). In the event of a natural disaster, mass evacuations are used to “move people from areas expected to be, or exposed to, high winds, flooding, and sea surges” (Aguirre, 2005, p. 58) and prevent loss of life. When a hurricane is on course to reach Cuba, the DCN will order, organize and lead the evacuations of the at-risk population (Oxfam America, 2004). The DCN collaborates with other organizations, including the FMC and CDR (E. Kirk, 2017), to determine who needs to be evacuated. However, the DCN is primarily responsible “for checking each home to make sure it has been evacuated, as well as supervising the evacuation and guiding people to where they are required to go” (E. Kirk,

2017, p. 4). When conducting evacuations, “all means of transport from cars to trucks to carts are mobilized by the local civil defense as needed” (Thompson, 2007, p. 12). Furthermore, Cuba’s government and the DCN have the “right to compel evacuations” (Aguirre, 2005, p. 58). Even though these evacuations are considered mandatory, “the authorities cannot force citizens to do so” (Nimtz, 2009, p. 133). However, the vast majority of Cubans citizens “follow these orders because, through experience, they understand that the measures are for their own safety” (E. Kirk, p. 4). The evacuated population is then sent to “albergues” (shelters), which are state-run institutions, such as schools or government buildings (Oxfam America, 2004). The shelters are “equipped with the necessary conditions to protect lives” (Millan Alvarez, 2010, p. 61) and essential resources, which includes food, water and medicine (Oxfam America, 2004). Shelters are staffed with medical personnel, police, Red Cross representatives (Oxfam America, 2004) psychologists and at times even clowns for the children (E. Sánchez, personal communication, October 14, 2018).

Communication acts as a key element of the Cuban disaster management model. INSMET works to keep Cuban citizens aware (R. Pérez personal communication, November 17, 2018) of possible natural disasters through the transmission of “reliable and timely” (M. Suárez, personal communication, November 21, 2018) weather-related information to the DCN and government, which is then conveyed to the local population (M. Suárez, personal communication, November 21, 2018). In general, the institute “monitors, detects, investigates, tracks and disseminates information about developing meteorological change, including hurricanes and sea conditions” (Oxfam America, 2004,

p. 26). INSMET focuses on providing early warnings, which give the Cuban population 48 to 120 hours' notice of impending "dangerous weather phenomenon" (M. Suárez, personal communication, November 21, 2018). In Cuba, early warnings "are communicated well and often. The government uses the official state-run media to inform the public of the risk of a natural disaster, and continually updates them through various means" (E. Kirk, 2017, p. 8). For INSMET, it is essential to cooperate and communicate with the DCN to allow "greater time for the preparation and execution of protective measures" (M. Suárez, personal communication, November 21, 2018). However, these early warnings also allow citizens to "become aware of the danger" (M. Suárez, personal communication, November 21, 2018) and therefore have the capacity to take precautionary and preventive measures. Weather updates are shared with the population through a variety of media, including radio, television and telephone (Meteorological Center of Sancti Spíritus, 2017). Due to Cuba's information system, Pérez states that Cuban citizens are already aware of impending hurricanes (even from many kilometres away) and it is possible for the country to be prepared and ready for the storm (personal communication, November 17, 2018). Suárez notes, "Cuban people...consider themselves to be specialists in baseball, medicine and the weather" (personal communication, November 21, 2018).

Furthermore, the Ministry of Public Health and, in particular, family doctors, assist in Cuba's preparedness and response measures. In order to safeguard the health and wellbeing of the Cuban population, the Ministry of Public Health works in collaboration with the DCN and other organizations, such as the Cuban Red Cross "to assure a multi-

disciplinary approach for prevention of disease, assurance of hygiene and epidemiological measures, and clear direction for the hospitals during the emergency and provision of clinical care” (Oxfam America, 2004, p. 38). This multi-layered coordination of prevention and response “makes optimum use of people and resources and strengthens the linkages between people’s work and their role in emergency response” (Oxfam America, 2004, p. 38). Family doctors, which are considered the “bedrock of the Cuban health system” (Oxfam America, 2004, p. 57), are crucially important in times of disaster. Family doctors are located in all Cuban communities and act as the “frontline for health care” (Oxfam America, 2004, p. 57). Within Cuba, family doctors emphasize the importance of “prevention and wellness promotion” and their duties include, screening, treating and monitoring patients, while also “also [carrying] out vaccination and health campaigns and [educating] the public on health issues” (Oxfam America, 2004, p. 57). In addition, family doctors keep records of patients “who are ill or have special physical or psychological needs” (Oxfam America, 2004, p. 32). Doctors share this information with members of the CDR to update risk-mapping and emergency plans (Oxfam America, 2004). During a natural disaster, family doctors are all stationed in specific areas. In the event of a disaster, family doctors are charged with the following responsibilities:

Check on patients in homes and assist in evacuation in coordination with the FMC delegates and the evacuation committee of the CDR under the local DCN. At the same time, hospitals are organizing emergency stocks and power supplies and guaranteeing their staff coverage. Chlorine tablets are distributed to the affected population through the Ministry of Public Health in order to assure the availability of potable water during the hurricane. (Oxfam America, 2004, p. 38)

Furthermore, if a doctor is assigned to a shelter, it is their responsibility to inspect the shelter's conditions and replenish medical resources (Oxfam America, 2004). According to Pérez, family doctors also take precautionary measures and inform their communities (personal communication, November 17, 2018). As a medical doctor, Pérez takes all preventative steps to ensure that no one could be injured or hurt in the event of a natural disaster. At the local clinic, Pérez ensures that all the most important tools and resources are secured, but also ready to be used in case someone needs care. He also provides community members with important information: find shelter in safe areas, stay away from cables and trees, charge batteries for radios and keep medicine close at hand (personal communication, November 17, 2018).

Within the Cuban National Education System, primary to post-secondary students (Scholaro Pro, 2018) have the opportunity to learn about the DCN and disaster reduction (Millan Alvarez, 2010). According to the Civil Defense, "Preparation takes place at different levels; one of the most important ones is the teaching-learning process developed in educational institutions and their far-reaching scope in the community" (Millan Alvarez, 2010, p. 47). Through "curricular and extracurricular activities," such as drills and school exercises, students "learn about the Cuban government's policy regarding the Civil Defense System which helps them understand its importance in the protection of the population, the economy and the environment" (Millan Alvarez, 2010, p. 48). Within these programs, there is an emphasis on "the importance of human solidarity, self-help and mutual help" (Millan Alvarez, 2010, p. 48), in which students "learn how to protect themselves, their family members and fellow citizens and also

animals, plants and common properties in the event of disaster situations” (Millan Alvarez, 2010, p. 47). In addition, topics related to the environment are also integrated within Cuba’s education system. In grade three, students learn about nature in the program “The World We Live In” (MINED, 2019). In this program, students have the opportunity to learn about the uses, potential hazards and how to protect natural entities, such as air, water and soil (MINED, 2019). While this program doesn’t specifically touch on disaster management, González notes that there is a plan in place to incorporate the topics of danger, vulnerability and risk into school curriculums (personal communication, October 19, 2018).

Semi-formal procedures. In addition to Cuba’s formal disaster management procedures, the model also involves several semi-formal methods. These semi-formal methods are not formally managed by government institutions or entities. However, the semi-formal procedures incorporate a mix of both governmental and local participation. As stated by Thompson (2007), “What makes the Cuban structure so unusual is its organizational structure, which builds on governmental and administrative structures already in place” (p. 9). While these semi-formal procedures are not specifically run by governmental agents, Cuba’s semi-formal procedures further convey the best practices of disaster preparedness among the Cuban population.

In Cuba, governmental institutions collaborate with mass organizations, such as the CDR and the FMC “to protect and care for the population as a whole” (E. Kirk, 2017, p. 7). Overall, the vast majority of the Cuban population is associated with the CDR

and/or the FMC (Llanes Guerra, 2010). For example, four million women over the age of 14, are involved in the FMC (“Federation of Cuban Women,” 2017). Thompson (2007) further describes this large-scale participation:

Cuba is a highly organized society with dense social networks that provide ready-made networks of communication. People may have memberships in several mass organizations and professional organizations which intersect and cross over neighbourhood, professional and workplace spheres. Such social organization builds knowledge and creates cohesion among different groups and actors which strongly enhances cooperation in times of emergencies. (p. 8)

The CDR acts as an integral component of the Cuban model and works in collaboration with government entities to execute disaster preparedness and response procedures. The CDR was originally created in the 1960’s to protect the Revolution from internal challenges such as dissent (R. Santos, personal communication, November 13, 2018) as well as to protect the population from foreign military intervention (Oxfam America, 2004). The CDR is a network of “neighbourhood committees...Run by and composed of neighbours, the CDR is a tremendous resource for emergency response work” (Oxfam America, 2004, p. 57). The general duties of the CDR include recording and documenting the population within their designated area. In relation to disaster preparedness and response, CDRs utilizes risk-mapping to determine the vulnerabilities of a community (Thompson, 2007). The CDR keeps record of all neighbourhood households and has documentation on what “houses are vulnerable to hurricane damage and which can act as shelter” (Oxfam America, 2004, p. 32). Furthermore, the CDR creates and updates a census to determine “who will need additional help for evacuation and who could be assigned to provide that help” (Thompson, 2007, p. 10). According to Oxfam America

(2004), the CDR “can mobilize a block extremely quickly and its leaders are cognizant of vulnerabilities and abilities in each neighbourhood” (Oxfam America, 2004, p. 57). The FMC, which was also established after the Cuban Revolution, assists in risk-mapping vulnerabilities by monitoring and keep records of all females living within a specific area and specifically documents those who are “vulnerable or in need of special assistance” (Oxfam America, 2004, p. 32). The collected information is then sent to be referenced and used by other disaster management groups, such as CDR leaders and municipality members. However, risk-mapping information is also employed to update community plans and “assign resources to make sure vulnerable populations have the necessary support for evacuation to adequate shelter” (Thompson, 2007, p. 10). Thompson (2007) states, “When the time comes to update the emergency plan every year, the CDR at the neighbourhood level collates this information from the relevant actors and puts it into that year’s community emergency plan” (p. 10). In addition to risk-mapping, they also contribute to and are involved in other preventative methods. The CDR will help cut down trees that could damage telephone and power lines. Members will also spread the word about measures to be taken in the event of a hurricane, such as boiling or saving water. As a result of their knowledge of specific areas, the CDR will also work with authorities, particularly the DCN, to encourage and help people evacuate (R. Santos, personal communication, November 13, 2018). Santos states, “The CDRs are a tool for transmitting information, spreading the word about what is going on. It’s a way of supporting the population and government. It’s cooperation, government and population, so they can preserve human lives” (personal communication, November 13, 2018).

Within Cuba, there is also an innate culture of hurricanes, resilience and safety, which guarantees “that the population is aware of the country’s risk reduction system, educated in risk consciousness and disaster mitigation, able to use the lifeline structures in an emergency and actively participate in disaster preparation” (Thompson, 2007, p. 6). Ruiz states, “We have a history, every Cuban knows what to do...We say that every Cuban person is a meteorologist” (personal communication, October 31, 2018). Through Cuba’s formal procedures of disaster preparedness and response, it was possible to build and form further culturally-focused methods, which continue to be shared and spread among the entire population. Thompson (2007) asserts, “The Cuban population is educated in disaster preparedness through media messages, the Cuban Red Cross and formal education in school, all of which form the ‘Culture of Safety’” (p. 9). In the event of a natural disaster, Cubans know what to do and when to do it. Pérez says that information about prevention and the cultural conscience of the population fosters an awareness among Cuban citizens. Through this understanding, citizens have the tools to take precautions and prepare for a natural disaster, such as securing their houses and staying away from electricity and trees (R. Pérez, personal communication, November 17, 2018), and fortifying glass windows. Ruiz says, “The number of people who die [in a hurricane] is almost zero. Sometimes one person, but the people know, they have a culture, they know what to do” (personal communication, October 31, 2018).

Informal procedures. In addition to Cuba's formal and semi-formal procedures, informal and intercommunal acts of solidarity are common among the local population.

Torres explains:

People in Cuba are always involved in social networks, whether it be work, community, health institutions. So, it's a feeling that you are not isolated, that you belong. These social agents are not separated. They are very integrated, they are tied, they are interdependent. (personal communication, November 9, 2018)

In Cuba, there is "neighbourly solidarity - ordinary people helping each other" (Grant, 2017, para. 32). Furthermore, within Cuban communities, "relationships are so tight, open-door that you consider that those people your family, even if they are not your family" (V. Torres, personal communication, November 9, 2018). In times of disaster, the local population communicates with one another. Ruiz states, "All the time, we prepare people...When there is a storm near to us, we go to the street" (personal communication, October 31, 2018). Furthermore, Cubans will often share supplies and find refuge in the houses of neighbours, friends or other family members. According to Oxfam, Cubans are "more likely to take shelter with family members, friends or strangers" (Friedman-Rudovsky, 2013, para. 18). For example, Hurricane Ike passed through Cuba in 2008. 2,772,615 Cubans were protected. However, only 500,000 people sought refuge in formal evacuation centres. The remaining 2,272,615 people "received solidarity shelter from relatives and neighbours" ("Información Oficial," 2008 p. 6). Torres states, "Cuban families are very fused...In crisis situations it's very important because all families move around the problem" (personal communication, November 9, 2018). For Reyes, solidarity among neighbours is "very important" and, in Cuba, "neighbours are very supportive"

(personal communication, November 5, 2018). According to Hernández, solidarity manifests itself in moments when it is needed most. Hernández says solidarity is needed most when a hurricane passes through Cuba (personal communication, October 31, 2018). For Hernández, collaboration is very important and “in the event of evacuation, friendly neighbours and their relatives give their homes” (personal communication, October 23, 2018). Peña says she has stayed with neighbours and neighbours have stayed with her in times of disaster. During a hurricane, she recalls having 17 neighbours in her house (personal communication, November 22, 2018). Peña states, “We all help,” (personal communication, November 22, 2018). Ruiz shares similar attitudes towards local solidarity. Ruiz stresses, “Everybody tries to help” (personal communication, October 31, 2018). She recalls many examples of helping those around her, which includes giving her friend candles and batteries, letting her uncle stay with her during a storm and keeping a neighbour’s food in her freezer. However, she has also received support from individuals around her, such as obtaining milk, bread and water from her neighbours (A. Ruiz, personal communication, October 31, 2018). Hernández says that “Cubans do not have much, but they give what little they have” (personal communication, October 23, 2018).

Disaster diplomacy and international response strategies. In addition to the country’s national response procedures, Cuba’s disaster management system also actively incorporates international response strategies. Rodríguez states:

In Cuba, it’s our duty. It’s the development program of the revolution. We have to provide our people educational services, medical services, assistance services,

cultural development. The solidarity in other countries is our duty also...We help in everywhere that we can. (personal communication, November 1, 2018)

Sánchez adds, “The Cuban population was educated in creating the willingness to help people from other countries” (personal communication, November 24, 2018). Since 1960, Cuba has offered medical education, cooperation and assistance in over 158 countries (Barbosa León, 2016a), including Venezuela, Bolivia and South Africa (Huish, 2014). Even with a shortage of resources and economic difficulties largely related to the embargo, the Cuban population has been effectively utilized to support outreach endeavors (Huish, 2014). As of 2016, 55,000 Cubans were working in 67 nations (Barbosa León, 2016a). In addition to fostering partnerships providing health services around the world, Cuba also offers and responds to help countries in times of crisis. According to Pérez, helping other countries in the same situation as Cuba is one of the most beautiful things the Cuban government does (personal communication, November 17, 2018). For Pérez, it is possible for Cubans to express their solidarity through this act of sharing, giving and helping (personal communication, November 17, 2018).

During the Ebola crisis in 2014 and 2015, calls for doctors and medical services were widely ignored by the international population (J. Kirk & Walker, 2016). While met with panic in North America and Europe, Cuba quickly offered to send help and supplies to West Africa (J. Kirk & Walker, 2016). Of all nations, Cuba provided the largest group of health care providers (J. Kirk & Walker, 2016) with a total of 465 Cuban medical professionals sent to West African countries (Huish, 2014), such as Guinea, Liberia and Sierra Leone (J. Kirk & Walker, 2016).

The best example of this is the case of Haiti. Cuba has a longstanding relationship with its Caribbean neighbour, including the provision of medical assistance, training and cooperation, which continues to this day (J. Kirk & Walker, 2016). After Hurricane Georges in 1998, Cuban doctors were indefinitely stationed within Haiti. Over the course of 12 years, 7,000 Cuban health care professionals were posted and practiced in Haiti (E. Kirk & J. Kirk, 2010). In response to the 2010 Haiti Earthquake and cholera epidemic, Cuba actively assisted in providing relief and care. The Cuban response was launched by the Internationalist Brigade of Solidarity with the Peoples, which was comprised of students from the Latin American School of Medicine and “formed in the wake of the disaster” (Fayyaz, 2010, p. 7). The brigade stated that they had “the moral duty, internationalist and in solidarity, of devoting ourselves entirely to the urgent needs of the population” (Fayyaz, 2010, p. 7). The first to deliver assistance (J. Kirk & Walker, 2016), Cuba provided 1,500 health care workers (344 medical workers were already stationed in Haiti and 350 others were members of the Henry Reeve Brigade) and acted as a main source of medical support (E. Kirk & J. Kirk, 2010) for 200,000 patients in Haiti (Fayyaz, 2010). In addition, more doctors from the Henry Reeve Brigade traveled to Haiti to help and provide aid after Hurricane Matthew in 2016 (“Cuba Sends,” 2016).

More recently, Puerto Rico was devastated by Hurricane Maria in September 2017. Some 2,975 people died as a result of the impacts of Hurricane Maria (“Puerto Rico Increases,” 2018) and, 10 months after the hurricane, 1,000 people were still living without electricity (Laughland, 2018). In the aftermath of Hurricane Maria, Cuba’s Vice Minister of Foreign Affairs, Rogelio Sierra Díaz (MINREX, 2019) proposed to send four

brigades of electricity workers (Sierra Díaz, 2017) and 39 doctors (“Cuba, Venezuela Offer,” 2017). Accompanying Cuba’s offer, Sierra Díaz posted, “Solidarity is the tenderness of the people” on his Twitter account (Sierra Díaz, 2017). In his speech at the 72nd General Assembly of the United Nations in September 2017 (TeleSUR English, 2017), Cuba’s Foreign Affairs Minister, Bruno Rodríguez Parrilla (MINREX, 2019), voiced similar sentiments. Rodríguez Parrilla stated, “I would like to express my deep condolences to the relatives of those victims of hurricanes Irma and Maria, as well as our readiness to increase our cooperation to the extent of our modest possibilities with our brother peoples and governments” (TeleSUR English, 2017).

Cuba also cooperates with other countries through an exchange of knowledge and education. INSMET collaborates with other countries, such as the Dominican Republic, Haiti (M. Suárez, personal communication, November 21, 2018) and Equatorial Guinea (Barbosa León, 2016b). In these collaborations, INSMET has the capacity to share their weather forecasting strategies, which includes an early alert system, procedural manuals (M. Suárez, personal communication, November 21, 2018) and automated weather stations (Barbosa León, 2016b). INSMET receives members from these countries and also sends their own groups to generate further learning opportunities. Suárez states, “It’s not about imposing our own opinion, it’s not about imposing our own views. It’s adapting what we do to their own specific countries...We learn from the experiences of these countries. The training we receive there” (personal communication, November 21, 2018).

The National Risk Assessment Group in the Environmental Agency, which is a subsection of the Ministry of Science, Technology and Environment (Ministerio de Ciencia, Tecnología y Medio Ambiente) (CITMA), also shares information, knowledge and results regarding Cuba's disaster management methodology with other countries, including Haiti, St. Lucia and the Dominican Republic (R. Ramírez, personal communication, November 13, 2018). Ramírez explains that other countries see "Cuba as the example to follow because of the culture we have in the country and the strategies we are trying to put into practice" (personal communication, November 13, 2018). However, Ramírez states, "We don't compel or force the country we're assessing to use our methodology. We don't tell them the places they need to work in, we just share our knowledge and results in the matter" (personal communication, November 13, 2018). For Ramírez, this exchange facilitates a transfer of knowledge and acts as an opportunity for creating capabilities and training (personal communication, November 13, 2018). Through these collaborations, Ramírez says it is possible to create a more integrated and vigilant system within the Caribbean, which could then allow for stronger disaster management processes (personal communication, November 13, 2018).

While Cuba offers disaster diplomacy, knowledge and relief, the country also receives solidary assistance from other countries and organizations in times of disaster. After Hurricane Sandy in 2012, Cuba received "18 planeloads of humanitarian aid...from countries including Venezuela, Russia and Japan as well as the International Red Cross and UN" (Rainsford, 2012b, para. 35). More specifically, Venezuela sent Cuba and Haiti "646 tons of non-perishable food, water, equipment and machinery" (LaBash, 2012, para.

7), the Dominican Republic provided ladders to help in electrical reconstruction, Bolivia sent 120 tons of water and food to reciprocate “the solidarity Cuba had shown in helping to eliminate illiteracy and train Bolivian doctors” (LaBash, 2012, para. 7) and Russia sent 30 tons of construction equipment (LaBash, 2012). Furthermore, the Red Cross sent “cookery and hygiene packs” to Cayo Granma in the aftermath of the hurricane (Rainsford, 2012b, para. 44).

In 2017, Cuba also received support and assistance from abroad after Hurricane Irma. The island received messages of solidarity from many countries, including Spain, Venezuela, Nicaragua, Argentina, Colombia, and Mexico (“Leaders of the World,” 2017). On September 9, President Enrique Peña Nieto of Mexico tweeted, “Mexico expresses its unwavering support and solidarity with the people of Cuba who are currently facing the force of the hurricane” (“Leaders of the World,” 2017, para. 15). Additional countries, such as Ecuador, Bolivia and Russia, also offered to send supplies and aid to Cuba (Center for Democracy in the Americas, 2017). After the hurricane, Panama sent food supplies, such as rice and oil, to Cuba and Copa Airlines provided “4,800 tons of hygiene products, sheets, food and other supplies to the Havana airport” (Whitefield & Gámez Torres, 2017b, para. 31). Furthermore, Oxfam and UNICEF provided assistance within Cuba (Center for Democracy in the Americas, 2017).

Challenges and limitations. Within Cuba, the topics of pollution, environmental sustainability and climate change pose as a challenge for Cuba’s disaster management system. While Cuba is becoming more environmentally conscious, González says there is

an overall “lack of environmental culture and education. It is not sufficient” (personal communication, October 19, 2018). Hernández emphasizes, “Sanitation of the city is bad. There is no full public awareness about the cleanliness of the city” (personal communication, October 23, 2018). Air, land and water pollution is commonplace in Cuba, specifically in urban settings. As stated by Larsson (2016), there are “serious environmental problems in the city. Problems with garbage collection, sewage overflowing pits, air pollution,” (para. 7). In Havana, air quality is impacted by dust and car fumes (Larsson, 2016). Debris is commonly found on the streets and bins are often overflowing with garbage and food waste. While Havana accumulates 2,400 tons of garbage per day, trash collection is inconsistent (“Havana Fights Trash,” 2018). Furthermore, Havana “has fewer than half of the 100 garbage trucks it needs to conduct daily trash pickups for the city’s 2 million residents. Many of those trucks...regularly are out of service due to a lack of spare parts” (“Havana Fights Trash,” 2018, para. 8). In addition, 113.5 billion gallons of water are “contaminated with agricultural, industrial and urban wastes are dumped into the sea annually” (“Air and Water,” 2007, para. 5). The Havana Bay is considered “one of the most polluted marine environments [in] the world” (“Air and Water,” 2007, para. 8). The bay acts as a main trading hub for Cuba, while also acting as a “dumping site for the growing population that has settled in the capital city at the water’s edge” (“Air and Water,” 2007, para. 8).

However, the impacts of climate change are visible and tangible in Cuba. According to CITMA (2017), Cuba’s climate “is getting warmer and more extreme” (p. 3). Since the last century, the annual temperature in Cuba has risen 0.9 degrees and sea

levels have increased by 6.77 centimetres. It is projected that sea levels will rise 27 centimetres by 2050 and 85 centimetres by 2100 (CITMA, 2017). Furthermore, Cuba was impacted by nine major hurricanes between 2001 and 2017, which is considered “unprecedented in history” (CITMA, 2017, p. 3). Rising sea levels and hurricane-related weather causes increased coastal flooding and erosion, which will lead to further loss of land and infrastructure (CITMA, 2017). According to Raúl Castro, “If current trends are maintained, they will produce a considerable elevation of the mean sea level in the Cuban archipelago. This forecast includes the intensification of extreme meteorological events...All this will have serious consequences, especially on our coasts” (CITMA, 2017, p. 12). Specifically, Cuba’s coasts are bordered by mangrove trees (Iturralde-Vinent & Serrano Méndez, 2015), which act as a protective barrier to hurricanes (J. Fernández, personal communication, October 30, 2018). However, as a result of rising sea levels, it is estimated that five percent of Cuba’s coast will be lost by 2100 (Castellanos Abella & Wisner, 2019). A significant loss in mangroves will reduce natural protection from hurricanes, which could increase overall damage. Therefore, the effects of climate change increase the risk of meteorological phenomena and, in turn, pose as a danger to the country’s land mass, infrastructure and local population.

However, Cuba has implemented several national and local strategies to deter the impacts of climate change and raise public awareness on environmental sustainability. Approved in 2017, Cuba implemented “Tarea Vida” (Project Life), a national project to confront the negative impacts of climate change (Rodríguez Milán, 2018). Headed by CITMA, the project outlines “actions to be taken” (Rodríguez Milán, 2018, para. 5) in the

short-term (2020), medium-term (2030), long-term (2050) and very long-term (2100) (CITMA, 2017). Notably, “Tarea Vida” includes five actions and 11 tasks to protect vulnerable areas, such as coastal cities and beaches, and promote environmental conservation. For example, “Task 3” asserts the objective to “conserve, maintain, and recover the Cuban archipelago’s sandy beaches, prioritizing those urbanized for tourist use and reducing the structural vulnerability of constructed properties” (Rodríguez Milán, 2018, para. 36), while “Task 10” seeks to “prioritize measures and actions to increase risk perception, understanding of, and participation by the entire population in confronting climate change, and a culture that promotes water conservation” (Rodríguez Milán, 2018, para. 43). González says, “We have a very strong environmental policy in Cuba” (personal communication, October 19, 2018). Ramírez states, “We are very proud of it” (personal communication, November 13, 2018).

Through evaluation and rehabilitation strategies, the State Working Group for the Havana Bay (Grupo de Trabajo Estatal Bahía Habana) (GTE-BH) seeks to improve the overall conditions of the basin, while also spreading awareness on environmental sustainability (Grupo de Trabajo Estatal Bahía Habana, 2019). GTE-BH is responsible for the “sanitation, conservation and development of the bay” and the “execution of preventative, corrective and environmental restoration actions” (Grupo de Trabajo Estatal Bahía Habana, n.d., para. 1). GTE-BH strives to improve water quality of the bay, reduce contamination, and execute reforestation initiatives and “raise the level of awareness and motivation of the population and institutions” (Grupo de Trabajo Estatal Bahía Habana, 2019, para. 9). Overall, GTE-BH aims to ensure that citizens are “responsible and

committed to the environment” (Grupo de Trabajo Estatal Bahía Habana, 2019, para. 16) and find “sustainable solutions to the problems of economic development, environmental protection and quality of life” (Grupo de Trabajo Estatal Bahía Habana, 2019, para. 20). According to Castillo, it is necessary to promote environmental sustainability in order to foster a culture of sustainable practices, such as recycling, among families and students (personal communication, November 2, 2018). Castillo says it is important that “people have a culture about environmental climate change” (personal communication, November 2, 2018). GTE-BH also promotes and coordinates several environmental programs, such as “My Community.” The community work program seeks to generate awareness on environmental issues and pollution, while also aiming to improve, mitigate and eliminate the negative impacts of climate change (GTE-BH, n.d.). The program “actively involves the community in the solution of its environmental problems” (GTE-BH, n.d., para. 1) and increases capacities for the population to “anticipate and contribute to the solution of environmental-health” (Grupo de Trabajo Estatal Bahía Habana, 2019, para. 10).

Furthermore, the Cuban disaster management system is subject to the country’s significant economic challenges, specifically economic hostility from the U.S. Beginning in 1958, while the rebellion led by Fidel Castro and the 26th of July Movement was ongoing, the U.S. implemented an embargo of arms against then-President Fulgencio Batista’s government (Suddath, 2009). Following the ousting of President Batista, the U.S. continued to intensify economic sanctions against the revolutionary leadership. For example, in 1960, while the Revolution was still in its infancy, the U.S. banned exports to Cuba, excluding medicine and food, and reduced “Cuban sugar quota in U.S. market to

zero” (Hufbauer, Schott, Elliott & Cosic, 2011, p. 1). The following year, President Eisenhower broke diplomatic relations with Cuba (January), and introduced the Trading with the Enemy Act (Gordon, 2012). The Act “allowed the president to impose economic sanctions on a hostile country during wartime ‘or any other period of national emergency declared by the President’” (Gordon, 2012, p. 64). That same year, the U.S. Congress also approved the Foreign Assistance Act, which prohibited “all aid to communist countries” (Gordon, 2012, p. 64). Moreover, in 1962, President Kennedy banned the importation of “all goods of Cuban origin and goods imported from or through Cuba” (Gordon, 2012, p. 64) into the U.S. and implemented what soon developed into a complex economic blockade against Cuba, known commonly as the embargo. This dramatically reduced trade between the two countries, and also evolved to include several amendments that significantly limited trade between Cuba and other countries seeking trading opportunities with the Caribbean island (U.S. Department of State, 2019). For example, the blockade was further intensified in 1992 with the Torricelli Act (also known as the Cuban Democracy Act) and in 1996 with the Helms Burton Act.

The aim of the embargo has consistently been to end the Revolution by crippling the economy. In 2019, the United States still “maintains a comprehensive economic embargo on the Republic of Cuba” (U.S. Department of State, 2019, para. 1). In terms of disaster preparedness and management, as Castellanos Abella and Wisner (2019) assert, “The economic blockade places severe burdens on the Cuban economy and the ability of the state to accomplish recovery in a timely way despite considerable mobilization of human and other resources” (p. 20). Among other major issues, economic limitations

create and sustain Cuba's infrastructure-related challenges as a result of a lack of goods including building materials. Within Cuba, "buildings are crumbling because they're old. Then there's the salt spray, humidity, termites, hurricanes" (Rainsford, 2012a, para. 10). It is estimated that of every 10 homes, seven require major renovations, while "7% of housing in Havana has formally been declared uninhabitable" (Rainsford, 2012a).

Furthermore, there is a constant demand for housing and accommodations. In 2005, there was a shortage of 500,000 houses among the Cuban population (Aguirre, 2005). As of 2017, there is an "accumulated housing deficit in the country, of about 880,000 homes" (United Nations, 2017, p. 4). Darias (2013) asserts:

Thousands of citizens in Cuba face a housing shortage. Buildings around the island are deteriorating and are in dilapidated conditions. Juxtaposed with the lack of material resources to build and repair homes, this poses a problem that Cubans face on a daily basis. (para. 2)

Martínez states, "We have a very strong blockade from the government of the United States and it is very difficult to have enough money to make...new houses" (personal communication, October 31, 2018).

Natural disasters, such as hurricanes, exacerbate these challenges and impede on the country's ability to quickly recover and fully reconstruct. According to Pérez, hurricanes provoke economic and infrastructural problems (personal communication, November 17, 2018). Hurricanes have left lasting structural impacts in Cuba and "left

countless economic damages to the national economy” (Millan Alvarez, 2010, p. 42).

Martínez explains:

At the beginning of the revolution, the decision was to make a big effort of construction for social goals...We didn't have hospitals and schools in the country. [But], we didn't have enough money to do everything at the same time. We didn't put many efforts to keep [up] the houses. Not for construction, but repair houses. We now have problems with houses that are very old and cannot resist a very strong hurricane. (personal communication, October 31, 2018)

Hurricanes Lily (1996), Georges (1998), Irene (1999), Gustav, Ike and Paloma (2008)

caused 10 billion US dollars in damages and destroyed 500,000 houses (Millan Alvarez, 2010), plus an additional 100,000 impacted houses from past hurricanes. Of 600,000 homes, 64% were damaged because of insubstantial roofing, while 21% “crumbled down either partially or completely due to rickety structures” (Millan Alvarez, 2010, p. 42).

After the hurricanes in 2008, approximately 200,000 Cuban families lost their homes

(Rainsford, 2012a). As of 2010, 57% of the 600,000 damaged homes have been rebuilt,

but 260,723 Cuban homes are still in need of reconstruction (Millan Alvarez, 2010). In

2012, Hurricane Sandy caused an “economic loss” of 4.7 billion pesos within Cuba

(Castellanos Abella & Wisner, 2019, p. 20). A total of 171,380 homes were impacted, “of

which 15,889 were totally destroyed” (Castellanos Abella & Wisner, 2019, p. 20). Four

years later, Cuba was still in the process of recovering and reconstructing. By 2016,

“26% of totally destroyed houses had been replaced; 60% of houses partially damaged

houses had been repaired; 82% of affected roofs had been restored” (Castellanos Abella

& Wisner, 2019, p. 20). In Havana, the physical impacts of hurricane-related winds, rain

and flooding are easily observable on Cuban homes and buildings. Salt water has left many homes with eroded facades, leaving bricks exposed underneath.

In response to these infrastructural challenges, Cuba focuses on preparedness measures, “vulnerability reduction” (Mallet Hernández, n.d.) and “building back better” (E. Sánchez, personal communication, November 24, 2018). To ensure the safety of its population, houses are being built away from coastal and flood areas in locations throughout Cuba, such as Las Tunas, Camaguey and Villa Clara (Millan Alvarez, 2010). Furthermore, changes in construction techniques are also being made. Houses are now being outfitted with metal and gabled roofs, which help resist strong winds. Concrete is also being reinforced with polystyrene to increase structural durability (Millan Alvarez, 2010). In the past, materials for reconstruction were subsidized by the government. However, “production slumped when state budgets became strained. Finding materials was difficult...There were also tight restrictions on building work” (Rainsford, 2012a, para. 15-16). Cuba has since changed its regulations and materials are now being sold at market price. The government has “implemented multiple measures such as subsidies for building materials for people whose homes were totally or partially destroyed. Loans with low interest rates and in 15-year terms of, have been destined to the purchase of materials and goods” (United Nations, 2017, p. 4). Cuba offers grants to impacted homeowners, which range from \$200 to \$3,000 (Rainsford, 2012a). While “hurricane victims are a priority...anyone on a low income and in what is considered “vulnerable” housing can apply” (Rainsford, 2012a, para. 18). Velazquez declares, “We used to subsidize materials now we’re subsidizing the individual” (Rainsford, 2012a, para. 19).

Furthermore, a theme and potential growing concern for Cuba's disaster management system is a "false sense of security" among the local population. While a majority of Cubans participate and comply with preparedness, prevention and risk reduction practices, there is evidence of non-compliance, and even resistance, through a lack of risk perception amongst some Cuban citizens. During times of disasters, a small percentage of the individuals are partaking in risky behaviour, such as going outside during a hurricane or refusing to evacuate their homes. In 2017, Hurricane Irma claimed the lives of 10 people, which is considered "very uncommon" in Cuba (V. Torres, personal communication, November 9, 2018). In Havana, a 71-year-old man was killed "when he touched a live electric cable as he was trying to take down an antenna" (Whitefield & Gámez Torres, 2017a, para. 7). A 77-year-old man died in Havana after being hit by an electricity pole that was "dislodged by the wind" (Whitefield & Gámez Torres, 2017a, para. 7). Furthermore, five of the 10 casualties were attributed to collapsed homes. Two brothers died in Havana after their house partially collapsed, while three men from Matanzas, Ciego de Avila and Camagüey were killed in their homes "after not following evacuation orders" (Whitefield & Gámez Torres, 2017a, para. 8). An 89-year-old Havana woman "was found floating in the water in front of her home after the storm surge" (Whitefield & Gámez Torres, 2017a, para. 9). Despite Cuba's efforts, the risk perception of certain individuals remains low. Even with a wealth of knowledge on danger and prevention, individuals still act in an unsafe manner. Torres cites the regularity and normalization of hurricanes as a potential link to the occurrence of dangerous practices (personal communication, November 9, 2018). Furthermore, there is a possibility that Cuba is too good at what it does in terms of disaster prevention, relief

and solidarity, which creates a false sense of security among the population and generates more reckless and unsafe behaviour. Torres states, “Even the most perfect thing has imperfections” (personal communication, November 9, 2018). Martínez further explains:

The effort of the state is very strong [in] spread[ing] knowledge and prevent[ion]. Even these people that make mistakes or don't take precautions...It's not because they don't know...They don't do what they need to do because they don't take care or don't listen. (personal communication, October 31, 2018)

While these practices can be attributed to a small percentage of Cuban society, it demonstrates an inability to stay aware, diligent and adapt to practices in emergency preparedness. Furthermore, the disregard of risk prevention reveals a rejection or lapse of solidarity values and action. While Cuba emphasizes and incorporates solidarity within their disaster management system, these cases demonstrate that there is also an onus on the individual to uphold similar standards insofar as it requires a personal willingness to participate.

Analysis

Solidarity and cosmopolitanism. In studying the Cuban disaster management model, it is clear that the concepts of solidarity and cosmopolitanism play an instrumental role in the foundation and structuring of the country's preparedness and response procedures. Within Cuba, solidarity and cosmopolitanism act as guiding forces that bind the Cuban people, shapes their values and interactions. The values and actions of solidarity and cosmopolitanism are noticeably present in all areas of Cuba's domestic and international response measures. Solidarity and cosmopolitanism are actively highlighted throughout all levels of Cuban society – from interactions between neighbours to

governmental policies. Through the shared values of these concepts, Cuba has effectively integrated solidary disaster preparedness and response measures, such as disaster education, population participation, evacuations and governmental aid.

In Cuba, the concept, value and action of solidarity is deeply integrated within the country's national strategies. As stated by Nimtz (2009) "Cuba's most essential feature is the presence and reproduction of human solidarity" (p. 133). In the country, solidarity "has been present from the start, and there are many examples that support it" ("Información Oficial," 2008, p. 14). Reyes adds, "There has always been solidarity. Always" (personal communication, November 5, 2018). In response to the revolution, solidary values and behaviours were shared and spread among the population (V. Torres, personal communication, November 9, 2018), which has allowed the concept of solidarity to become a value and, in turn, an action. González says, "This kind of value is historically incorporated in the Cuban nature. It is part of our culture" (personal communication, October 19, 2018). Rodríguez states, "Solidarity is, first of all, a feeling, then an ideology and a movement with concrete actions" (personal communication, November 1, 2018). For Pérez, this theoretical concept is significant in Cuba because the population has grown up thinking about solidarity. Furthermore, Pérez says human expression is very important in Cuba and this drives the population to share their conscience of solidarity (personal communication, November 17, 2018). This foundational set of values then generates the possibility to physically act and cooperate in solidarity. González states, "Solidarity is a principle, is a value...the things that the government and Cuban schools do, is just to emphasize this kind of value" (personal communication, October 19, 2018). Within Cuba,

solidarity has become an intrinsic value that has been applied to and intertwined with Cuba's social and institutional networks, which directly relates to the notion that solidarity can create "relations between places, activists, and diverse social groups" (Featherstone, 2012, p. 5). Cuba's disaster management system incorporates law and policies to reduce vulnerabilities and enhance livelihoods. Therefore, the "value-concept solidarity has been instrumental in both conceptualizing and realizing these achievements" (Powell, 2008, p. 12).

Cuba's disaster management system stresses the importance of acting in solidarity to preserve and protect the quality human life, which effectively enforces the solidary notion of having "genuine concern for each other's welfare" (Cureton, 2012, p. 696). Unified by their shared characteristics (Ferdman & Kohn, 2018, p. 546) and values, the majority of Cuban society cooperate together in "support of shared ends" (Cureton, 2012, p. 698) and play a role in ensuring the safety of the population. According to Santos, "Every single Cuban, not just Cuba as a whole, every single Cuban is an example of solidarity in the neighbourhood, the house, the workplace" (personal communication, November 13, 2018). There is a desire and readiness to help, participate and contribute to the disaster management model, whether it be sharing resources with neighbours, the DCN, CDR and FMC helping citizens evacuate, or medical professionals working in shelters. In Cuba, and especially during a disaster, "nobody is without help" (A. Ruiz, personal communication, October 31, 2018).

Furthermore, the actions and services of the Cuban disaster management system meet and express the values of solidarity. Within Cuba, neighbours and families seek refuge with one another and share supplies. This demonstrates the solidary action of carrying the costs of someone “with whom a person recognizes sameness or similarity in at least one relevant respect” (Dawson & Jennings, 2012, p. 73). The DCN, INSMET, CDR, FMC and health care professionals work within communities to assess risk, inform and aid in the protection of the population, which stresses the solidary duty to carry the costs of the public who are “linked by means of a shared situation or cause” (Dawson & Jennings, 2012, p. 73). Additionally, policies and laws relating to disaster management and the DCN abide by the solidary action of sanctifying commitments within the legal frameworks (Dawson & Jennings, 2012).

The emphasis of preparedness, vulnerability reduction, education and safeguarding human lives within the Cuba’s national strategies directly correlates with the cosmopolitan duty of not causing harm or imposing “specific minimal constraints on conduct that worsens the situation of others” (Pogge, 2008, p. 15). An imposed global order has significant impacts on individuals (Pogge, 2008) and harm is caused by institutions inflicting or perpetuating “serious unjust rules” (Pogge, 2008, p. 16). Pogge (2008) explains this idea further:

An institutional design is unjust if it fails to realize human rights insofar as it is reasonably possible. In fact, an even weaker assertion suffices: any institutional design is unjust if it foreseeably produces massive avoidable human rights deficits. Such an institutional order, and participation in its creation or imposition, harms those whose human rights avoidably remain unfulfilled. (p. 25)

Therefore, any “institutional design” (Pogge, 2008, p. 25), including a disaster management system, has the capacity to avoid causing harm to others or uphold unjust regulations, which can directly impact the population and produce an “avoidable human rights deficit” (Pogge, 2008, p. 25). In Cuba, the safety and security of the population acts as the foundation of the country’s disaster preparedness and response procedures, which validates and sustains the notion of not causing harm to others.

While Cuba’s disaster management system corresponds with cosmopolitan’s negative duties, the island’s preparedness and response procedures also demonstrate the positive duty to act (Pogge, 2005) and “assist those in need” (Gilbert, 2005, p. 539). Through Cuba’s formal, semi-formal and informal procedures, all levels of society – from the government, DCN, health care professionals, INSMET, to the local population – take an active approach in ensuring the safety of all individuals. Through their actions, which includes risk-mapping, mitigating risks, planning and executing educational exercises, informal and formal evacuations and communication, the Cuban model fulfills the duty to “do something” (Singer, 1965, p. 99).

Most importantly, the Cuban disaster management system acts an alternative design to disaster capitalism. The concept of cosmopolitanism asserts that an institutional order must avoid causing harm to others (Pogge, 2008). However, there is a false assumption that an institution can only provide benefit or harm. It is possible for a design to improve lives and benefit the group, while also causing harm to others (Pogge, 2008). In relation to the institutional order of disaster management, disaster capitalism has the

capacity to reduce the misery of those impacted by a natural disaster through charity, assistance and philanthropy. However, it can also inflict further harm on the health and wellbeing of individuals. Naomi Klein (2008) states, “Disaster capitalists share this inability to distinguish between destruction and creation, between hurting and healing” (p. 54). Disaster capitalism focuses on self-interest and economic gains, rather than improving the human condition. These sentiments are exemplified in the example of Hurricane Katrina, where the “facts of this exposure are well known – from the levees that were never repaired, to the underfunded public transit system that failed, to the fact that the city’s idea of disaster preparedness was passing out DVDs telling people that if a hurricane came, they should get out of town” (Klein, 2008, p. 491). However, Cuba’s disaster management system provides a clear alternate design in its ability to not cause undue harm to its citizens. The Cuban model rejects the use of for-profit and corporate methods and, instead, focuses on the protection of the population and meeting their basic needs. Furthermore, the Cuban disaster management model creates a normative environment in responding to hurricanes, which is based on the cosmopolitan and solidarity values of helping one another. Therefore, Cuba’s practices should not be considered exceptional, but a baseline of disaster management practices. In the case of Cuba’s disaster management system, no exceptional act is being done. In contrast, Cuba’s strategies follow the negative minimal duties of not causing harm and imposing an unjust intuitional order on its population, while still upholding best practices for emergency response.

In addition, Cuba's international response strategies can be explained and understood as a manifestation of solidarity. According to Pérez, solidarity highlights the following concepts: humanism, sensitivity, conscience, professionalism, brotherhood and internationalism. Therefore, Cuba's international approach to preparedness, response and relief are a way of actively expressing and sharing solidarity with others (personal communication, November 17, 2018). More specifically, Cuba's disaster diplomacy and international response strategies abide by the principles of solidarity in their willingness "to help others" (Kritikos et al., 2007, p. 74). For Fidel Castro, international outreach is seen as "paying off our own debt to humanity" ("Fidel: Soldier of Ideas," 2016, para. 1) and to reduce the idea of "individual selfishness" (Saney, 2009, p. 114). Cuba's ability to provide relief outside of its borders demonstrates the desire and readiness to help others "who by chance came to a much worse position than they themselves" (Kritikos et al., 2007, p. 74). Martínez states, "Selfish[ness] is against the values of solidarity...Solidarity is to take care of another person as if another is yourself. When solidarity is practiced you don't give this person what you don't need, you give to them what you have" (personal communication, October 31, 2018). Sánchez adds, "Solidarity is not to give you what I have to spare. Solidarity is to give you what I have with me now, what I'm using now" (personal communication, November 24, 2018).

Even with minimal resources and financial capital, Cuba has emphasized the importance of disaster diplomacy and works in solidarity with other nations to provide disaster response services. While it is possible for solidary cooperation to "produce benefits" (Huish, 2014, p. 3) for all parties involved, actions "must not be performed in

expectation of reaping future personal benefits” (Kritikos et al., 2007, p. 74) and “individuals must be sufficiently motivated to depart from selfishness” (Kritikos et al., 2007, p. 74-75). In nations around the world, Cuba provides disaster response, relief and works collaboratively to share knowledge and expertise. Cuba’s international response strategies emphasize the importance of mutual exchange, which effectively departs from self-serving and selfish practices.

Furthermore, Cuba prioritizes and incorporates international response procedures, which directly corresponds to the ideas and values of cosmopolitanism. According to the theory of cosmopolitanism, all individuals are inherently equal (Brown & Held, 2010) and have a “a globalized and universal concern” for each other (Brown & Held, 2010, p. 3). Therefore, all humans have moral obligations to one another and must “go beyond the strong pressure to privilege those nearest to him or her” (Kendall et al., 2009, p. 1). By prioritizing disaster response abroad, Cuba effectively highlights these cosmopolitan ideals. Cuba’s emphasis on international response corresponds with the cosmopolitan idea that “we have as much reason not to harm foreigners as we have not to inflict equivalent harms on compatriots” (Pogge, 2008, p. 16) and demonstrates that the country has internalized the moral and ethical responsibilities of cosmopolitanism. It is clear that Cubans possess a cosmopolitan consciousness in their assertion of helping others within and outside of the country. However, this is affirmed through their “political action” (Fine, 2007, p. 134). Instead of focusing solely on their own population, Cuba moves outside of the nation-state and equally applies their preparedness and response measures to provide relief in other countries. It is clear that the values of cosmopolitanism govern

the reality (Fine, 2007) of Cuba's disaster management system insofar as the implementation of disaster policies and international strategies. Therefore, Cuba's ability to provide care in other countries effectively demonstrates their concern for all people and upholds the notion that all humans should be treated equally.

Cuba's international response strategies also emphasize the cosmopolitan value of human connection and learning "from our differences" (Appiah, 2006, p. xv). In Cuba, INSMET and CITMA collaborate with other countries to share and give knowledge, while also fostering connections and understanding. This mutual exchange of knowledge breaks down the barriers of nation-states and acts as "an opportunity for connection rather than as a pretext for separation" (Kendall et al., 2009, p. 1). According to González, "It's necessary to share the knowledge that Cuba has. Yet, at the same time it is necessary for Cuba to learn from other experiences. To share and receive" (personal communication, October 19, 2018).

Additionally, Cuba's international response strategies act in correspondence with cosmopolitanism's positive and negative duties. The positive duty of action and doing "something good for another" (Rawls, 1972, p. 114) is demonstrated through Cuba's ability to help in times of disaster, while also arranging a collaborative exchange of education and training with other countries. However, these collaborations could also be considered as abiding by principles of negative duties. Cuba's international strategies promote the ideas of preparedness and preparation, which highlight the cosmopolitan duty to not cause harm to others (Pogge, 2005). Overall, these exchanges have the

capacity to provide other countries with tools of prevention and risk reduction, which could attribute to the aversion of harming others (Pogge, 2005) in the future.

Cuba is not a wealthy country. Alternatively, Cuba utilizes the social capital to protect the population and assert the notions of solidarity and cosmopolitanism. In a 2005 speech, Fidel Castro emphasizes this notion:

Human capital is worth far more than the financial capital. Human capital involves not only knowledge, but also—and this is essential—conscience, ethics, solidarity, truly humane feelings, spirit of sacrifice, heroism, and the ability to make a little go a long way. (Huish & J. Kirk, 2007, p. 90)

Capitalizing on the resources they have, Cuba's disaster management system emphasizes and acts on the notion of preserving the population, while also extending these ideals and actions to other countries. While these disaster procedures can be viewed as extraordinary within a global context, the Cuban system simply refutes the implementation of "unjust rules" (Pogge, 2008) and, instead, upholds cosmopolitan minimal commitments of avoiding harm. Furthermore, Cuba's disaster management system demonstrates the solitary requirement of the "willingness to contribute to the common good" (Van der Zee & Perugini, 2006, p. 85). Cuba's best practices, such as risk reduction, education, international diplomacy, are all employed to keep individuals safe and effectively encapsulates the concept of solidarity. The normalization of these solitary and cosmopolitan ideals among the Cuban population create strong best practices and sophisticated defenses.

Furthermore, the concept of solidarity has the capacity to be spread and disseminated among others. Solidarity is a concept, value and action that is not limited to specific regions, people, etc. Alternatively, solidarity is a “creative process which speaks to the bringing together of relation and trajectories. This positions solidarity as actively generating and shaping shared values and identifications” (Featherstone, 2012, p. 23). Within the context of disaster management, Cuba’s solidary values and practices have the capacity to be shared with other countries and organizations, which can lead to “new ways of relating” (Featherstone, 2012, p. 5), connections and mutual exchange. According to the concept of solidarity, this spread of Cuba’s values and procedures has the ability to transform ways of connection, shape “universalizing practices” (Featherstone, 2012, p. 38) and “produce new ways of configuring political relations and spaces” (Featherstone, 2012, p. 6). Therefore, through the spread of solidarity, it is possible for individuals and communities to continuously develop and practice their own solidarity identifications and actions (Featherstone, 2012).

Chapter 5: Takeaways, Recommendations and Conclusions

Takeaways, Lessons Learned and Recommendations

Takeaways and lessons learned from the Cuban model. In conclusion, the Cuban disaster management model offers several takeaways and lessons to be learned. E. Kirk (2017) states, “The Cuban example of planning, motivation, participation, and disaster management, some five decades in the making, undoubtedly offers important lessons in this regard” (p. 9). The Cuban model acts as a key example of effective disaster-related practices, which include elements of “local leadership, community mobilization, popular participation in planning, community implementation of lifeline structures, and the creating and building of social capital” (E. Kirk, 2017, p. 6-7).

At its core, Cuba has a very well-organized disaster management system, which is based within and enforced by law. Through governmental involvement and policy, Cuba has sanctified the influence and duties of the DCN, which streamlines and solidifies the country’s preparedness and response procedures. According to Millan Alvarez (2010):

The secret to getting better achievements lies in the ability of the leaders to jointly embrace the complexity of the situation, set up priorities, organize the work, unite the forces, demand discipline, educate with the personal effort, spell out the needs of each and every task, convince, enthuse and raise the spirit of others, and muster up the willingness of the people. (p. 57)

The involvement of the DCN and other organizations, such as the CDR, FMC and INSMET, create a well-ordered and efficient system with responsibilities varying from

risk-mapping, risk reduction, evacuations, communications, etc. Furthermore, virtually all members of society (the government, meteorological institute, media, health professionals and the local population) play a role in preparing and responding to a natural disaster. Bermejo (2006) asserts, “Everyone in Cuba participates, even before disaster strikes, and each has a clear mission. Local authorities know who needs special care and how to locate and attend to the most vulnerable” (p. 16). In various ways, arguably all members of the Cuban population are involved and participate in preparing, responding and recovering from a natural disaster. From the local population to government officials, each individual person has a specific responsibility (E. Álvarez, personal communication, October 23, 2018) that contributes to the progression and continuation of the overall system. According to Sánchez Miranda and Choonara (2010), “It is important to recognize that Cuba has a population with a very high level of civil participation. The majority of the population are members of different mass organizations, and there is a strong sense of community spirit” (p. 329). Therefore, the utilization of social capital within Cuba allows for collective action of different skill sets and responsibilities, which creates a more well-organized and far-reaching disaster management system with expansive services. Through the utilization of social capital, there is a capacity to “create high levels of compliance even in a resource-poor environment” (Oxfam America, 2004, p. 49). In Cuba, the “social capital involved is threefold: people’s understanding of the importance of saving lives...trust that resources they contribute will be given for the common good; and the relationships of cooperation that have been built through the experience of collaboration” (Oxfam America, 2004, p.

49). Cuba's ability to implement a centralized "government structure and mass participation have...played major roles in its success" (E. Kirk, 2017, p. 9).

Cuba's disaster management system also incorporates mass participation in disaster education. Within Cuba, the entire population is versed on hurricane-related risks, the importance of prevention and how to react in the event of a disaster (UN/ISDR, 2004). Through the DCN, INSMET, education system and "Metoro" training, Cubans are "continuously informed and trained to cope with natural hazards. From their early age, all Cubans are taught how to behave as hurricanes approach the island" (UN/ISDR, 2004, p. 1). All members of the population are extremely well educated on the subject of natural disasters. As stated by Bermejo (2006), Cubans "are well informed about what to expect...[Cubans] are familiar with the full cycle of activities from reducing risks, to planning logistics for emergencies and responses, preparing communication networks, providing early warning, and regularly reinforcing training" (p. 16). The emphasis of disaster-related education in Cuba allows for the population to be "aware of the risks associated with hurricanes and understands government warnings" (Sánchez Miranda & Choonara, 2010, p. 329). Torres states, "If you are not educated, you do not know what to do" (personal communication, November 9, 2018). López states, "The people here have the tools to face hurricanes" (personal communication, October 17, 2018). Therefore, an educated and involved population creates a culture of preparedness and efficiency, which reduces panic, risk and lives lost.

Cuba's disaster management system emphasizes the importance of prevention and risk reduction, which allows Cuba to effectively prepare for a natural disaster and minimize hurricane-related casualties. Within all elements of the Cuban model, which include risk reduction management centres, "Meteoro" training, evacuations, international response strategies, there lies a common thread: preservation of human life. In other words, people and their safety are the top priority. Material resources are secondary. In reducing potential risks, the local population has the capacity to prepare and respond to hurricanes, which can minimize the amount of lives lost. Torres explains this idea:

In a society where consumerism is a value, this disaster situation becomes a business... What is important is the stuff, what you are able to buy, what you are able to preserve, what you are able to not lose. But here, it's a very humanist system. What is important is to preserve your life. The most important thing is to preserve life, not things. That's what makes it wonderful. (personal communication, November 9, 2018)

Rather than focus on safeguarding material items, the principal objective of Cuba's preparedness and response practices is to ensure the safety of people within the country.

Furthermore, the concepts of solidarity and cosmopolitanism are deeply integrated within this system. These concepts act as the foundational values of the Cuban disaster management model. Cuba's preparedness and response procedures reflect a deep internalization of these concepts, which is demonstrated through the actions of Cubans within the country and around the world. In Cuba, solidarity is expressed through the population's ability to help each other in times of disaster, as well as help others who have been affected by crisis abroad. According to Torres, the Cuban disaster management

model is “an expression of the social system in general. I think it cares because the Cuban government cares. The system is humanitarian...You don’t feel like you’re alone” (personal communication, November 9, 2018).

Recommendations for other countries and organizations. It is necessary to note that all nations and institutions have their own unique history, culture, policies, etc., which impact their overall practices. The study of Cuba’s disaster management system is no different. The Cuban model is a product of the country’s individual historical, political and societal practices. Therefore, this research does not aim to employ specific elements of the Cuban disaster management model to be applied within specific countries or organizations. Instead, this research includes broad recommendations, which are generated and stem from the effective components of the Cuban disaster management model. In highlighting what is done well and efficiently in Cuba, there is a possibility for other countries and organizations to learn from these practices, generate a dialogue on best practices in relation to disaster management and implement practices that are appropriate and tailored to their own specific systems. Therefore, this research includes five recommendations:

Mandate disaster management practices through government involvement and policy. A contributing factor regarding the efficacy of Cuba’s disaster management strategies is the structuring and organization of the overall system. In regard to disaster management, it is necessary to have “concrete programmes of action and the political will to implement policies and measures” (UN/ISDR, 2004, p. 2). Disaster policy and

government involvement leads to an engaged and prepared system (B. Hernández, personal communication, October 31, 2018) with defined and designated responsibilities. Through policy and governmental involvement, it is possible to formalize plans of action, assign duties and collaborate with multiple sectors with differing expertise. Díaz asserts, “Resources might not be enough without government involvement, strength of government, not education at state level” (personal communication, October 29, 2018). Government involvement and disaster-related policies will strengthen overall practices through organization, distribution of responsibilities and coordination of various skills.

Involve and educate the local population. The ability for Cuba to reduce risks and disaster-related casualties stems from the country’s activated and educated population. The implementation of disaster education or prevention-focused programs (E. Martínez, personal communication, October 31, 2018) mobilizes the public and gives individuals the tools to prepare and react (E. Álvarez, personal communication, October 23, 2018) in a safe, effective and efficient manner. According to Smith, a government does not have the capacity to coordinate and mitigate all disaster management-related practices, so it is necessary to partner and rely on the community and “figure out how the community can plug in to the formal response to make [it] as efficient as possible” (D. Smith, personal communication, September 27, 2018). It is essential to enable the community to come together, create an informal response network and help themselves (D. Smith, personal communication, September 27, 2018). Smith (2018) says, “It’s doing things that can mobilize interest in the community, having community groups form from the bottom up.” Smith cites the importance of community organizations, such as cultural groups, small

business associations and housing cooperatives, in supporting each other and different communities (personal communication, September 27, 2018). Public awareness and involvement provide the capacity for the local population to understand the risks related to natural disasters, what to do in the event of a disaster and when it is necessary to act. A knowledgeable and involved population leads to adequate preparation, decreases vulnerabilities and reduces the amount of lives lost.

Implement an organized communication and early warning system. Communication acts as an essential element of Cuba's disaster preparedness and response strategies. In the event of a hurricane, Cubans are given advance notice of an impending storm and, therefore, have enough time to prepare, mitigate risks and/or evacuate. The Cuban government, DCN, INSMET and the media collaborate with one another to provide the local population with up-to-date information throughout the course of a hurricane. Therefore, it is important to integrate an organized communication and early warning system (A. Díaz, personal communication, October 29, 2018) to reduce risks and casualties. According to Oxfam America (2004), "package information simply, use an easily accessible medium, and build on the communication resources at hand" (p. 49). The utilization of systematic communication creates a streamlined and accessible source of information, which would lead to a more informed public, reduce confusion and minimize disaster-related casualties or injuries.

Focus on practices that involve preparedness, prevention and risk reduction.

Through an emphasis on preparedness, prevention and risk reduction, Cubans efficiently

reduce damages and lives lost. Cuba's disaster preparedness strategies are employed at all levels of society, from the government to the local population. Practices, such as the evacuation of individuals in at-risk areas, preparing shelters, cutting down trees, boiling water, etc., promote the notions of prevention, planning in advance and risk reduction. As stated by Bermejo (2006) "Planning in advance of disasters is a feasible way of helping people" (p. 19). Therefore, it is essential for a disaster management system to encourage and implement multi-level preventative strategies to prevent disaster-related damages or casualties. These practices ensure that risks are perceived and reduced (A. Díaz, personal communication, October 29, 2018) and the population is prepared, in advance, for a natural disaster.

Prioritize the quality of human life and focus on practices that involve solidarity and cosmopolitanism. While the current global system is set up in a material-driven and self-interested manner, Cuba's disaster preparedness strategies come from a commitment to solidarity and cosmopolitanism. González states, "I think that one thing should be common for everyone: to preserve human life. The most important is the people...The most important is not the things, the table, refrigerator" (personal communication, October 19, 2018). The main objective of the Cuban disaster management model is to protect the livelihoods of its population and others around the world. Cuba's disaster practices are designed and employed "with all, and for the good of all" (Martí, 2007, p. 155) to secure a shared sense of personhood and dignity. Furthermore, Cuba's strategies emphasize the importance of community and global ties. In turn, this solid sense of community provides the capacity for the Cuban population to effectively work together to

reduce vulnerabilities, help each other to rebuild and support others during times of crisis. The Cuban disaster management system demonstrates that communal solidarity is stronger than and resilient to a natural disaster. This notion is exemplified through a quote that can be found on the wall of the DCN headquarters in Havana: “A revolution is a force more powerful than nature.” Through the commitment to solidarity and cosmopolitanism, Cuba’s procedures provide the population with the to flourish, thrive and restore their livelihoods in the wake of a natural disaster.

Concluding Remarks

In response to the research question and thesis statement of this study, Cuba’s disaster management model effectively organizes and responds to the needs of its citizens. Gómez says “It is very effective. Because first, the population is the centre of attention of the civil defense. It is not just the protection of material courses” (personal communication, November 6, 2018). Through policy, risk reduction and mass participation, Cuba has formed an organized and efficient system to protect the population. While challenges remain, the overall efficacy of the Cuban disaster management model is demonstrated through minimal loss of life, preparedness procedures and ability to mitigate and reduce risks. In Cuba, the population works in solidarity to prepare and respond to natural disasters. Cuba’s s prevention and response practices, which includes disaster education, evacuations and communication, can all be considered valuable lessons for other countries and organizations. According to Wayne S. Smith, former American ambassador to Cuba and affiliate of the Center for International

Policy, “the effectiveness of the Cuban system is not in doubt. Only a few Cubans have lost their lives in the 16 largest hurricanes to hit the island in the last decade. The likelihood of being killed by a hurricane in the United States is 15 times greater than Cuba” (Lamrani, 2015, p. 55).

Pérez asserts that the Cuban disaster management model is more than effective. While Cuba defends its own population, the country also helps other nations in times of disaster (personal communication, November 17, 2018). Within Cuba, the main objective of the disaster management system is to safeguard the population, which is also extended to other countries through the country’s international strategies. Bermejo (2006) explains:

Cuba is better prepared to protect its people and resources than most countries in the world...wherever needed to assist other nations in the face of catastrophe, Cubans are willing and able to share their expertise. They can help improve preparedness, disaster response, and longer-term recovery – and offer services of a[n]...emergency response team. (p. 15)

Cuba’s national and international strategies integrate and utilize the practices of collaboration, communication, prevention and response, which abide by and uphold the principles of solidarity and cosmopolitanism. The concepts of solidarity and cosmopolitanism act as the underlying values and motivators of the Cuban disaster management model. Solidarity and cosmopolitanism inform and propel Cuba’s value of human life and prevention in the context of disaster management. In turn, these values govern the country’s approach to relief and allow Cubans to act in solidarity with one another, as well as with other countries.

Overall, the topic of disaster management is incredibly pertinent and important for global development. As a result of climate change, ocean temperatures and sea levels will continue to rise, which allows for more intense hurricanes in the Atlantic Ocean (Center for Climate and Energy Solutions, 2017). Therefore, it is imperative that different strategies are explored and examined to help countries and agencies prepare and respond efficiently to natural disasters. As stated by Bermejo (2006), “While the atmosphere continues to be warm, it generates more intense rains, more frequent heat waves, and more ferocious storms. Thus, achieving better protection of developing countries from an increasing onslaught of natural disasters will only grow in importance” (Bermejo, 2006, p. 19). Therefore, this research has the capacity to share Cuba’s preparedness and response practices and generate a dialogue on disaster management, solidarity and cosmopolitanism. In sharing the influence of solidarity and cosmopolitanism within Cuba’s practices system, it is possible to demonstrate how the value of solidarity and cosmopolitanism can be recreated into actions. While Cuba’s disaster management system is intrinsically tied to the concept of solidarity, it is a mistake to view solidarity as “actions based solely on similarities of culture, language or location” (Huish, 2014, p. 3). Pogge (2008) asserts, “Dismantling these rationalizations, and challenging the popular attitudes associated with them, may seem like a struggle without end...Nonetheless, the struggle is neither pointless nor endless” (p. 32). With the continuation and acceleration of natural disasters around the world, the Cuban disaster management model acts as an example of preparedness and offers insight into the transformative roles of solidarity and cosmopolitanism. Therefore, in highlighting and sharing the impact of solidarity on

Cuba's disaster management system, there is a possibility for solidary values and actions to be spread, internalized and applied by other countries and organizations.

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