LEARNING LESSONS THROUGH EXPERIENCES WITH DISASTERS: Exploring Institutional Memory-Building and the Informing of Disaster Relief in Nova Scotia and Beyond

by

Jillian Wood

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TABLE OF CONTENTS

LIST OF FIGURES

ABSTRACT

This thesis explores the central research question: how are lessons learned from experiences with disasters? Based on three case studies detailing Nova Scotia Emergency Management Office's experiences responding to the Swissair flight 111 crash, Hurricane Juan, and the H1N1 virus, follow-up activities to relief efforts are analyzed and some shared 'lessons learned' are identified. Specific approaches to evaluating and adapting policies/projects from within the Red Cross, as well as systems for building and preserving institutional memory from within the World Bank, are also discussed. Within the general framework of a 'capacities and vulnerabilities analysis', an analysis of relevant literature suggests that the value placed on institutional memory-building and linking 'lessons learned' with context-specific 'changes to behaviour', will influence relief organizations' ability to respond effectively to disasters.

LIST OF ABBREVIATIONS USED

NS EMO	Nova Scotia Emergency Management Office
NGO	Non-governmental organization
EOC	Joint Emergency Operations Centre
RCMP	Royal Canadian Mounted Police
DND	Department of National Defense
HRM	Halifax Regional Municipality
NSPI	Nova Scotia Power Inc
IFRC	International Federation of Red Cross and Red Crescent Societies
ICRC	International Committee of the Red Cross
IDP	Internally displaced persons
WBG	World Bank Group
IDA	International Development Association
IBRD	International Bank for Reconstruction and Development
IFC	International Finance Corporation
MIGA	Multilateral Investment Guarantee Agency
ICSID	International Centre for Settlement of Investments Disputes
EDI	Economic Development Institute
WBI	World Bank Institute
M&E	Monitoring and evaluation
OECD	Organisation for Economic Co-operation and Development
CVA	Capacities and Vulnerabilities Analysis
CBA	Cost-benefit analysis

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CHAPTER 1: INTRODUCTION

1.1 THE HALIFAX EXPLOSION

On December 6, 1917, two ships collided in the harbour of Halifax, Nova Scotia, killing nearly 2,000 people and injuring roughly 9,000 more. With one of the ships loaded with explosives meant for the First World War, the collision resulted in one of the largest human-made explosions prior to the atomic bomb, devastating the Canadian coastal city (Kernaghan & Foot, 2017). Not only did the initial blast send out a destructive shock wave in all directions, it was followed by a tsunami that washed over the shores of Halifax and Dartmouth, bringing even further devastation to the region. With over 25,000 people without shelter and a winter blizzard heading for the city the very next day, the Halifax Explosion would result in the most intensive relief effort the region had ever seen. In addition to the support received from the government, the tragedy marked the first Canadian Red Cross involvement in domestic disaster relief, a role which later became one of the organization's main priorities (Canadian Red Cross, 2017). Total property damage was estimated to be around $600 million ($35 million in 1917) (Kernaghan & Foot, 2017).

At the time, Halifax was unprepared for the scale of relief effort that was required for such a catastrophic event. In the years leading up to the explosion, social services were primarily provided by private charities rather than government, and resources were meagre. City officials worked to organize committees that would be responsible for emergency food, shelter and transport, while the military had the power to control looting and regulate movement in and out of the city. As news of the explosion spread in the days following the disaster, relief personnel and supplies made way into Halifax from neighboring directions,

as well as trains from the rest of the Maritime provinces, central Canada and New England. Of particular importance, massive volumes of relief workers and supplies were organized and sent from Boston, Massachusetts. More than $340 million ($20 million in 1917) was raised from around the world in support of re-building the city and the lives of survivors, with funds being distributed (albeit unfairly) by the Halifax Relief Commission from 1918 to 1976 (Kernaghan & Foot, 2017; Culligan & MacPhee, 2019).

The Halifax Explosion was a devastating disaster, causing an incredible amount of death and destruction. While one would hope never to experience such a disaster again, it is still worth considering what the response to such an event would look like today. In the event of an emergency, Halifax now has the support of a number of governmental and non-governmental organizations, including Nova Scotia's Emergency Management Office (previously, the Emergency Measures Organization). If a disaster of this magnitude were to happen again in Nova Scotia, what would the relief effort look like? What types of lessons were learned from the tragic events of 1917? How did Nova Scotia respond to the gaps in relief that became evident following the blast? What gaps might still exist today? These are just some of the questions that have led to the design of this research project.

1.2 Emergency Management In Nova Scotia

Emergency (or disaster) management refers to the organization of resources and responsibilities in relation to emergencies. While disasters are typically considered to be more severe than emergencies, the terms will be inter-changed throughout this study, as the purpose is to focus on the follow-up activities to such crises. Emergency management activities can take place at any or all of the phases of preparedness, response and recovery

in an attempt to lessen the impact of disasters (IFRC, 2020). Emergencies and disasters can result when,

> a hazard interacts with a vulnerability to produce serious and adverse consequences that may, for an undetermined period of time, exceed the ability to cope. Natural hazards and disasters that are relevant to emergency management include extreme natural events such as floods, hurricanes, storm surges, tsunamis, avalanches, landslides, tornadoes, wild-land urban-interface forest fires and, earthquakes. Human-induced disasters that concern emergency management include intentional events that encompass part of the spectrum of human conflict, such as terrorist or cyber-attacks. They also include electrical power outages or other disruptions to a critical infrastructure sector (e.g. finance, water supply and telecommunications) that result from a human or technological accident or failure. In addition, biological hazards, such as animal or human health diseases that risk causing a pandemic (Public Safety Canada, 2017, p.11).

When considering disaster management, it is important to recognise the different stages of the 'disaster management cycle'. The first stage, pre-disaster, calls for activities such as prevention, mitigation, and preparedness. The second stage occurs when a disaster impacts the region. Finally, the last stage, post-disaster, includes rehabilitation efforts, recovery and response (Malilay et al., 2014). For the purposes of this research project, all of the stages of disaster management are relevant, but primary focus will be placed on the post-disaster stage of the cycle as this stage allows for a more thorough analysis of a disaster as a whole. There are however opportunities to learn at each one, and if given due attention, post-disaster lessons can be drawn and acted upon to improve all stages of disaster management in the future.

In Canada, provincial and territorial governments are responsible for overseeing most activities within their respective regions. In the event of an emergency, the initial response is primarily executed by the local authorities, and sometimes at the provincial or

territorial level. Only when (and if) a provincial or territorial government requests further assistance does the federal government tend to become involved in the emergency response (Public Safety Canada, 2017). While municipalities across Nova Scotia are primarily responsible for handling emergencies within their jurisdiction, in cases where emergency services have to work together, Nova Scotia's Emergency Management Office (NS EMO) is called upon to take the lead in coordinating a provincial government response. Like all jurisdictions in Canada, NS EMO operates under an all-hazards approach to emergency management, preparing for and responding to vulnerabilities stemming from all types of hazards and disasters.

1.3 Purpose And Approaches To Research

Natural disasters are becoming more frequent and severe due in part to the devastating effects of climate change (Oxfam International, 2018). Roughly 160 million people worldwide are affected by natural disasters every year (World Health Organization, 2019), calling for an analysis of the current disaster relief strategies in place. While natural disasters are "naturally occurring physical phenomena caused either by rapid or slow onset events which can be *geophysical* (earthquakes, landslides, tsunamis and volcanic activity), *hydrological* (avalanches and floods), *climatological* (extreme temperatures, drought and wildfires), *meteorological* (cyclones and storms/wave surges) or *biological* (disease epidemics and insect/animal plagues)" (IFRC, 2020), this thesis will also include examples of technological or man-made disasters such as a plane crash. The decision to include all types of disasters within the following discussion was made with the intention of demonstrating the value of incorporating ideas stemming from institutional memory, lived

experiences, evaluations (and the other relevant concepts presented in the following chapters), into all decision-making processes related to disaster relief, as well as the importance of considering the local context in which a disaster takes place. The subsequent chapters will explore the central research questions: *How are lessons learned from experiences with disasters?* In seeking to answer this, 'lessons learned' approaches to knowledge management, and their linkages to institutional memory, capacity-building and policymaking, will be defined and discussed within the context of disaster relief.

As outlined by Anderson and Woodrow, development activities should operate with the underlying principle of increasing capacities and reducing vulnerabilities (n.d.). This principle will be applied to the following chapters focused on disaster relief and some related concepts, and the authors' Capacities and Vulnerabilities Analysis (CVA) will be used as a lens through which case studies will be analysed and applied to larger discussions. Recognition of the local context in which a disaster takes place is essential to the use of this analytical framework. With most national relief policies continuing to rely on 'command-and-control' and top-down frameworks (Gaillard & Mercer, 2012; Anderson & Woodrow, 1989; Maskrey, 2011; Audefroy & Sanchez, 2017), further investigation into the ways in which government agencies and related NGOs can best integrate knowledge stemming from a variety of sources into disaster relief decision-making is needed in order to improve the resilience of those facing the impacts of disasters. This research project can hopefully be useful in the development of future disaster relief frameworks and contribute to a larger discussion on 'best practices' in responding to disasters.

1.4 Methodology and Methods

Growing up on the East Coast of Canada has allowed me the opportunity to experience several disasters (primarily of the meteorological variety), first-hand. Learning about the Halifax Explosion in school, and memories of events such as the Swissair disaster (1998), Hurricane Juan (2003), White Juan (2004), and H1N1 (2009), led me to begin volunteering with the Nova Scotian branch of the Canadian Red Cross. Experiences responding to extreme weather events within my own community (e.g., organizing temporary shelters in school gymnasiums and giving talks on how to prepare emergency kits), provided me with a glimpse into some of the activities that take place before and following a disaster. The more I learned about disaster relief and recovery, the more questions I had. *What actually defines a disaster? What causes it? How might people experience the impacts of disasters differently? What more can be done to help prevent them? How can responses be improved?* Coupled with the various opportunities stemming from my involvement with the Red Cross, visits to the NS EMO (and the discussions that took place there), eventually led to this particular study interest.

Unfortunately, shortly after embarking on the researching and writing of this thesis, the COVID-19 pandemic began to sweep across Canada. Nova Scotia's EMO was tasked with much of the responsibility in responding to the emergency in the province, and therefore was understandably occupied with the handling of the unprecedented situation. While the provincial office has always been nothing but generous and willing to support my interests in any way possible, in light of current events, it was felt to be inappropriate for me to burden the staff with continued requests for internal documents and interviews, therefore a number of adjustments to the original research design were made. I decided to

anchor my case studies to the three Nova Scotian (already-documented) experiences (the Swissair crash, Hurricane Juan, and the H1N1 virus), and concurrently seek to draw 'big picture' ideas from two major international organizations (namely the International Federation of Red Cross and Red Crescent Societies and the World Bank Group) for broader background perspectives. I do, however, propose to undertake the original research plan once the present health crisis is over, and then to integrate the findings from interviews into a small book and contribute the package to the EMO for follow-up purposes.

Adapting to the challenges of thesis-writing while in the midst of a pandemic, I chose to review a cross-section of cited reports, books and other publications, as well as examine a variety of useful frameworks for planning and analysis, in an effort to explore how lessons can be learned from experiences with disasters. Throughout all of the stages of research and writing, discussions of possible questions and tentative 'findings' took place with a number of people with first-hand experiences with the organizations involved and/or in disaster recovery/development situations. Chapter 2 of this thesis provides a brief review of some relevant concepts and literature related to the topic, including an introduction to 'lessons learned' approaches to knowledge management. Chapter 3 explores specific examples of evaluating and adapting policies/projects from within the Red Cross, as well as systems for building and preserving institutional memory from within the World Bank. Chapter 4, (which focuses on Nova Scotia's experience with the Swissair Flight 111 crash, Hurricane Juan, and the H1N1 virus) is informed by a collection of transcripts, policy reports, news articles and personal reflections from the people who were involved. In compiling this material, each case follows the rough framework of: 1) the historical background of the disaster, 2) the resulting response, 3) the evaluation of the

response, and 4) any lessons that were learned from the experience as well as any changes that were made as a result. The chapter concludes with a brief discussion on how the 'lessons learned' from these experiences might be applied to the COVID-19 response in Nova Scotia. Finally, Chapter 5 provides a brief summary of the main points discussed throughout the study, highlights some of its limitations, and offers a few suggestions for future research.

1.5 Analytical Frameworks

There are countless different frameworks that might prove useful when considering approaches to disaster relief, as well as approaching discussions on how lessons are learned from experiences. Many frameworks, however, have been criticized for their limitations in adapting to different contexts and populations (Montesanti et al., 2012), highlighting that frameworks should ideally be simple (McAllister, 2016). It is important to remember that frameworks should not be viewed as 'prescriptive', but rather helpful in providing explicit frames of reference for analysing and agreeing on co-operative approaches. While they can serve as potential 'guides for action', they should also facilitate relevant questions and alternatives (McAllister, 2012).

Highlighted in Anderson and Woodrow's, *Rising from the Ashes,* is that many disaster relief projects do not adequately consider the vulnerabilities that might have led a region to experience a disaster in the first place, resulting in relief efforts operating as short-term solutions that do not address underlying problems. The authors also acknowledge that in the case of some relief projects, efforts are undermined by failing to work with and strengthen local capacities. In addressing these observations, Anderson and Woodrow

suggest using 'vulnerability-reduction' and 'capacity-building' frameworks for identifying future relief and development projects (1989). Designed with the underlying principle that "development is the process by which vulnerabilities are reduced and capacities increased," Anderson and Woodrow's Capacities and Vulnerabilities Analysis (CVA) is based on three main assumptions:

> 1) No one ever 'develops' anyone else, as people and societies develop themselves, with or without the help of external agencies. Therefore, people are participants not just in projects but in the process of development.
> 2) Development is the process by which vulnerabilities are reduced and capacities are increased.
> 3) Relief programs are never neutral in their development impacts. Relief efforts which are not development-oriented, and do not strengthen the capacities which people already have, intensify their vulnerabilities (Eade & Williams, 1995, p.325).

Although this framework was originally presented over 30 years ago, its simplicity yet versatility remains incredibly valuable to the field of disaster management, and will therefore be used as a lens through which the following chapters are discussed.

In an effort to address complex and wide-ranging experiences while still maintaining some simplification to allow for accessibility, an analytical framework can be a useful tool (Anderson & Woodrow, n.d.). There are many variables that must be taken into account before deciding on a disaster response. An analytical framework such as the Capacities and Vulnerabilities Analysis allows for the consideration of categories of factors that cover important variables while remaining concise enough that they can be easily remembered. In order to reduce vulnerabilities within a region, it is essential that its capacities are identified so that decisionmakers are aware of the strengths that exist and

how they can contribute to future development. “When a crisis becomes a disaster (i.e., it outstrips the capacity of the society to cope with it) then the society’s vulnerabilities are more noticeable than its capacities. However, for agencies wanting to help with recovery and systematic development beyond recovery, understanding both is essential” (Anderson & Woodrow, n.d., p.2).

Analysing capacities and vulnerabilities allows for organizations to engage with communities’ knowledge of risks and locals needs, giving them the opportunity to incorporate such resilience into a project design or relief strategy (IFRC, 2006). Most disaster relief is centered around the physical/material needs of a community; however, this is not necessarily the *most* important realm. While essential supplies such as food, shelter and medicine may be lacking, Anderson and Woodrow highlight the fact that communities will always have some physical/material resources left and “these capacities are the point of departure for developmental work” (Anderson & Woodrow, n.d., p.4). It is essential to understand the physical vulnerabilities of an area and determine how these vulnerabilities might have led to the position the community finds itself. The physical/material category can include environmental factors, health, land, skills and labour, food, infrastructure and technologies (Anderson & Woodrow, n.d.). When considering social/organizational vulnerabilities and capacities, one must understand the social structure of the community before the disaster took place. This not only includes formal political structures, but also informal social systems. When divisions exist according to race, religion, class, language or ethnicity, the social fabric of a community can weaken, leading to an increased vulnerability of the people that live there. That being said, it is equally important to consider the ‘social coping systems’ (i.e., family,

community, and area-wide organizations) that are already in place and might contribute to overcoming a disaster (Anderson & Woodrow, n.d.). Finally, with respect to motivational/attitudinal capacities and vulnerabilities, one must ask how the community views itself as well as how it views its ability to address its environment. In considering this, it is important to note people's beliefs and motivations prior to the disaster and how they have changed since. The strengths and weaknesses identified in this category can have a significant impact of the community's ability to rebuild its material base or social institutions. A shared purpose or sense of empowerment within a community has the potential to contribute to overcoming a disaster and even building stronger economic and social systems (Anderson & Woodrow, n.d.). It is crucial that disaster relief efforts do not reduce these capacities. The IFRC notes that many of its National Societies have benefitted from the process of identifying capacities and vulnerabilities within specific regions because it has a tendency to bring staff and volunteers into close contact with people at the local level (IFRC, 2006).

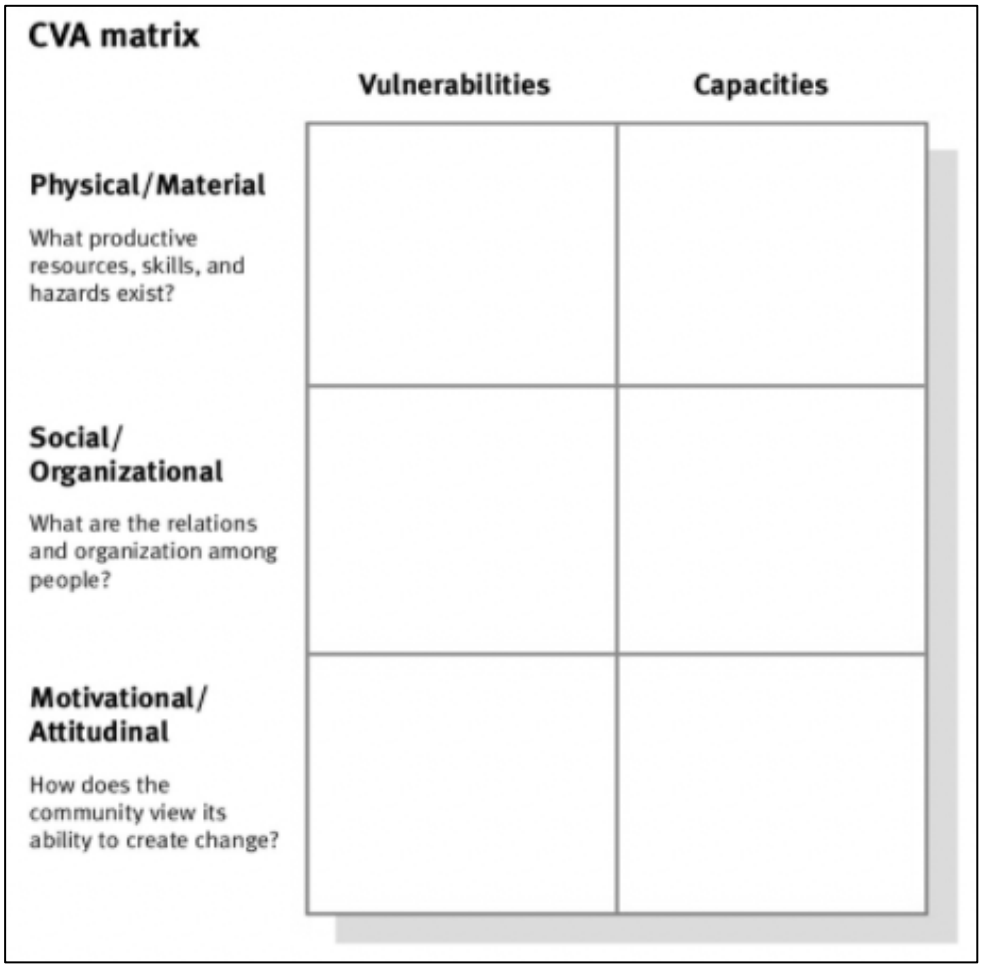

Figure 1 Capacities and Vulnerabilities Analysis Matrix (Anderson & Woodrow, n.d., p.3).

While the Capacities and Vulnerabilities Analysis Matrix (Figure 1) is a useful tool for disaster relief and development organizations working to assist those effected by disaster, it is important to acknowledge its limitations. The reality is that communities, and the people that make up those communities, experience disaster differently. In addressing this reality, authors Anderson and Woodrow include additional dimensions to their analytical framework:

> Five factors must be added to the analysis in order to make it reflect complex reality and, therefore, to increase its usefulness. These five dimensions are:

A) disaggregation by gender;
B) disaggregation according to other differences;
C) constant change;
D) interactions among the analytical categories; and
E) scale/levels of application (Anderson & Woodrow, n.d., p.6).

When considering the way forward with a disaster relief or development project, the Capacities and Vulnerabilities Analysis Matrix can and should be adapted to account for the factors of a complex reality. The CVA's simplicity yet versatility has led researchers to adapt its original intent of guiding humanitarian intervention and disaster management to fit different contexts. For example, authors, Birks, Powell and Hatfield slightly adapted the framework to focus on addressing emerging problems and social issues related to gender (2016). In keeping with the framework's original approach to disaster management and relief, this adaptation is also meant to focus on the community level. The IFRC notes that there has been some misunderstanding in its application, as some National Societies attempted to analyse capacities and vulnerabilities at the country level as a type of national-scale evaluation (2006). This analytical framework is inherently rooted in the community level, and much of what it hopes to acknowledge and address can be missed when applying it to a much larger scale. Another challenge noted by the IFRC is that local people can often have a different perception of risk than the relief organization in question. Priority is not always given to 'conventional hazards' associated with natural disasters such as hurricanes, floods or earthquakes. A community might be more concerned with 'everyday risks' such as unsafe drinking water or health risks (IFRC, 2006). Communities' concerns should be valued if collaboration is to succeed.

In addition to the CVA, cost-benefit frameworks are essential to any disaster relief or development organization. Although this study will not directly focus on the intricacies of funding relief efforts and resulting development projects, it is a worthwhile framework to keep in mind, as the concept of 'cost' goes far beyond monetary amounts. While the World Bank has been a significant 'pioneer' in the promotion and use of cost-benefit frameworks for planning and analysis, all disaster relief/development organizations can benefit from a clearer understanding of future projections associated with a proposed plan or project in order to better manage assets and inform decision-making processes. While this type of analysis can come in many forms, disaster relief organizations should be implementing some form of framework in which costs and benefits of proposed projects are estimated for the lifecycle of the project. In addressing particular issues within a disaster relief organization, there might be several proposed projects put forward at one time, competing for funds. It is likely that those tasked with assessing proposals will consider several different factors before deciding which project should receive the funds that would turn it into a reality. In determining the appropriateness of a proposed project, it is essential to conduct an assessment of anticipated outputs, however it is important the outputs are placed in context (McAllister, 2016). As costs and benefits are sometimes difficult to estimate with absolute certainty, it is important to recognize that some measure of uncertainty should be factored in when considering the project options (Proag & Proag, 2014; Rai et al., 2020).

In addition to the obvious financial costs associated with a disaster relief plan or development project, there are many other important 'costs' that should be considered before moving forward. Public costs (e.g., tax concessions or student grants), societal costs

(e.g., unemployment or ethnic tension), environmental costs (e.g., air, light or water pollution), foreign exchange costs (e.g., for imported parts), and political and security costs (e.g., violence or undermining of community values) are just some examples of how a project might contribute to larger associated issues (McAllister, 2016). Unfortunately, cost indicators can sometimes be misleading, so they should be considered within context and without the assumption they are concrete and absolute. These costs should be weighed against the benefits before determining whether or not a project, plan or policy should be decided upon. Important to remember is that sometimes, doing nothing might be the right choice.

The anticipated benefits of a project must also be carefully considered beyond simply financial revenues. As outlined in Ian McAllister's, *Projects in Search of Relief With Development*, some examples of possible 'benefits' include: fees for public services (e.g., energy bills or bus fares), better health conditions (e.g., increased immunization), saving of lives (e.g., a result of a coastguard surveillance project), and increased employment opportunities and incomes (McAllister, 2016). While a cost-benefit analysis is a good tool for gathering quantitative information, it does not come without some limitations, and when using this type of analysis for qualitative factors, it can be even more difficult (Proag & Proag, 2014). Though it can be challenging to accurately estimate the anticipated benefits of a plan or project, a determined effort to do so has the potential to lead to significantly improved design. The simple use of even a basic framework that helps to organize the more 'measurable' costs and benefits can help (McAllister, 2016), and combining such frameworks with other tools (such as a cost-effectiveness analysis and/or robust decision-making approaches) can be even more helpful (Mechler, 2016).

CHAPTER 2: REVIEW OF KEY CONCEPTS AND LITERATURE

The following sections serve as useful background information on 'lessons learned' approaches to knowledge management (2.1.1), institutional memory (2.1.2), and policymaking, capacity building, and evaluations (2.1.3). They introduce some of the relevant knowledge and perspectives that already exists within the extant literature that will later be applied to discussions of disaster relief and development in the cases of the International Federation of Red Cross and Red Crescent Societies, the World Bank Group, and Nova Scotia.

2.1 'Lessons Learned' Approaches to Knowledge Management

Knowledge can be defined as, "information combined with experience, context, interpretation, reflection, intuition, and creativity" (Aktharsha, 2011, p.104). It can be applied to the development of products, policies and procedures, and serve as a renewable, reusable and accumulating resource of value to the organization in which it is applied (Aktharsha, 2011). While most discussions of knowledge management also inference information management, the difference between knowledge and information is important to note. Information can be summarized as "processed data that has been equipped with meaning" (Makani, 2008, p.145). Simply put, "information does not become knowledge until it is used by someone" (McNabb, 2007, p.30). Considering this, it is crucial that there are systems in place within an organization that work to collect, store, share and apply knowledge so that the decisions being made are done so with care. These types of activities can be included in the definition of knowledge management, defined for the purpose of this

study as “any systematic activity or activities related to the capture and sharing of knowledge by an organization” (Earl, 2003, p.26).

While knowledge management relates to a much wider concept of organizational learning, a lessons-learned approach is a specific example of a knowledge management activity. Following the occurrence of an emergency, a ‘lessons learned’ approach functions by gathering the experiences of those who responded to the event, and then highlighting the mistakes or gaps in preparedness as ‘lessons’ (Rostis, 2007). The approach has four main functions: to gather experiences, analyse them, disseminate the lessons, and finally to implement changes to modify behaviour (Granatosky, 2002). Issues can arise when any of these functions are overlooked or not properly executed. Wiewiora and Murphy highlight that despite the potential for ‘lessons learned’ to offer rich knowledge capture, “lessons are often documented as simple, line-item statements devoid of context” (2015, p.17). It is a rigorous and dynamic process, and one that should continue past the simple identification of a lesson.

While it is not often possible to entirely prevent the occurrence of disaster, the goal of continuously improving preparedness and response remains at the top of the list for most disaster relief organizations. While some researchers argue that with an increase in severity and frequency of disasters should come a more rigorous approach, the lessons-learned approaches remain among the primary means of knowledge management within emergency management agencies in Canada (Alexander, 2006; Carley & Harrald, 1997). Coming from Public Safety Canada on the framework of Emergency Management,

> Lessons learned and knowledge generated from quantitative and qualitative information should be used to develop improved practices, which are then shared widely. After emergencies or disasters occur, a systematic approach is used to learn

> lessons from the experience, increase effectiveness and improve emergency management practices and processes. Recovery from a disaster may be completed by documenting and internalizing lessons learned. Continuous improvement, including incremental and transformational change, is undertaken systemically as an integral part of emergency management measures and practices at all levels, as appropriate, to minimize the recurrence of problems (Public Safety Canada, 2017).

With the potential of helping organizations evolve towards better responses to disasters, it is essential that the lessons-learned approach is fully understood by those within the organization. With an approach that largely operates through a retrospective analysis of encountered experiences, concrete steps must be taken following the learning of lessons in order to promote meaningful change within the group (Rostis, 2007). In order for this to happen, knowledge must be passed down through senior officials or managers to all workers involved, as everyone within an organization should be responsible for learning (Darling et al., 2005). Considering that in Canada, emergency management organizations are typically organized in a top-down and command and control design, the most effective way of translating knowledge to a team within an organization warrants careful consideration (Granatosky, 2002).

Sometimes, the task of identifying potential lessons in the aftermath of an emergency response is made even more challenging when considering other potential issues. At times, lessons are dismissed due to political or legal reasons, to avoid individual responsibility, or even to protect the pride or reputation of an organization involved, emphasizing the importance of the lessons-learned process not being used as a review of accountability (Auf der Heide, 1989; Morris & Moore, 2000). Wiewiora and Murphy note that the most commonly cited reason for poor ‘lessons learned’ capture is the lack of time dedicated to the activity (2015). Following research motivated by the questioning of

emergency management agencies' dependency on the lessons-learned approach, Adam Rostis concludes that "lessons learned is a widely used, poorly understood and largely ineffective knowledge management practice in provincial and territorial emergency management agencies in Canada" (Rostis, 2007, p.209). While this research project takes into consideration such perspectives, and recognizes some of the challenges that come with using a 'lesson learned' approach within an emergency management context, it argues that when used in conjunction with other frameworks and approaches, it holds value. Chapter 3 will discuss in greater detail, how the World Bank Group approaches challenges associated with the 'lessons learned' approach. As noted earlier by McNabb (2007, p.30), if "information does not become knowledge until it is used by someone," it is imperative that lessons be *used* and applied to evaluate past efforts, adapt existing plans, and develop future policies.

2.2 Institutional Memory

Institutional memory often refers to the collective knowledge and learned experiences of a group (IGI Global, 2020). It is externally expressed shared knowledge among members of an organisation about the outcomes of past experiences. This sharing of knowledge can occur through a variety of different means including interpersonal relations, meetings and events, uploading and downloading data to and from databases, written memos, emails, as well as official publications (Hardt, 2017). Corbett et al. define memories as "the 'representations of the past' that actors draw on to *narrate* what has been learned when developing and implementing policy" (2018, p.5). They go on to explain, "when these narratives are embedded in *processes* they become 'institutionalised'" (2018, p.5). This emphasis on embedded narratives is what distinguishes institutional memory

from other forms of learning and allows for genuine adaptation and innovation (Corbett et al., 2018). Institutional memory develops as shared knowledge is updated across time and space in response to changing perceptions about the past, and operates as a form of storytelling that links past experiences with present problems (Hardt, 2017; Corbett et al., 2018).

Early literature focusing on some of the negative aspects of institutional memory highlights the possibility that relying on memories can limit the range of solutions that an institution can consider when faced with a problem (Nystrom & Starbuck, 1984). Alternatively, some positive effects include the opportunity for memories of past events to result in improved decision-making because of the ability to better anticipate causal associations (Schon, 1983). More recently, it has been suggested that a more dynamic conceptualisation of institutional memory (one that also incorporates agreed upon facts or truths and emphasizes context) can help mitigate some of the challenges and build upon some of the advantages (Corbett et al., 2018). The current discussion recognizes that institutional memory should not be the *only* resource that is considered when responding to disaster, but it does however remain an essential element of a more robust and informed decision-making process.

It is vital that knowledge and experience encompassed within a particular group is passed on to those who come next, who might be tasked with similar demands. This might take the form of proper documentation, or a series of 'exit interviews' as a means of collecting and preserving as much knowledge and experience as possible, as repeating errors in this case can lead to serious consequences for both the organization in question as well as the country at which the relief effort is focused (Hardt, 2017). Christopher Pollitt

(2009) suggests that "high rotation of staff, changes in IT systems which prevent proper archiving, regular organisational restructuring, rewarding management skills above all others, and adopting new management 'fads' as they become popular" all contribute to significant loss of institutional memory within organisations (p.207).

> The percentage of organizations (even well-known ones that include universities and institutions with research mandates) that has developed reasonably reliable, comprehensive and professionally relevant institutional memory systems still appears to be relatively small. Examples of organizations that have done this include some international banks (again the World Bank stands out), some universities (e.g., Harvard), some NGOs (e.g., OXFAM), some UN agencies (e.g., UNICEF) and so on…Rapid staff turnover rates, early retirement programmes and the like can readily leave a legacy of institutional flaws. Many organizations indeed do not even have routine procedures, when officials move on or retire, to capture their 'lessons learned' insights nor to collect and sort documentation they may have built up (McAllister, 2016, p.93).

Institutionalising memory is not something that should only occur following a particular policy decision or procedural implementation, but those involved should continuously be engaged in this dynamic process (Corbett et al., 2018). In the context of disaster relief experience, the lessons that come as a result are not only of value if they remain within the organization in question (but are, ideally, shared more widely). An important distinction to make when discussing institutional memory is the difference between an honest recount of experience, and what may be promoted as institutional history that in reality is superficial 'marketing material', put together to promote the desired image of an organization (McAllister, 2016). While seemingly common, this sort of exercise does little to improve responses in the future. Both the institutions providing disaster relief, as well as those at the receiving end, have a vested interest in the ability of that institution to learn from past experiences and apply it to the future. Ian McAllister

(1993) notes, “An institutional memory is far more than a museum of past endeavours. It is the hub of present practices and a platform for future policies" (p.57). Whether through more formalised organisational structures, or the conscious agencies of the people involved, what institutions remember influences the way they approach future tasks (Corbett et al., 2018).

2.3 Policymaking, Capacity Building and Evaluations

Policymaking is one of the many processes that can benefit from a fully understood ‘lessons learned’ approach to disaster management, as well as dedication to institutional memory building. While there might not be one ‘right’ way of informing policymaking decisions, when considering how lessons can be translated into policy, the work of Robert Broughton Bryce (1910-1997) provides useful insights. As a former economist and Canadian civil servant, Bryce suggests a series of steps that governments should take in order to arrive at informed decisions. Captured from the article titled, “The Essentials of Policy-Making”, Figure 2 outlines Bryce’s seven main steps that should be considered throughout the process of deciding upon a policy to pursue (1981). While there are many resources that could be drawn upon when approaching discussions of policymaking, Bryce’s steps serve as useful guidelines while allowing for flexibility given the context. Those suggested steps remain important today when considering how those tasked with decision making can best inform processes surrounding disaster management and relief. In considering these steps, it is important to remember that the choices that are made should be specific to the community in question, and they will be dependent upon the needs of that community as well as the resources available (Bryce, 1981; Stahl & Cimorelli, 2020).

7 Steps to Policy-Making:

1. *Problem Identification*: While seemingly simple, this is a crucial step in the process as it will inform all subsequent steps. It is essential for the identification of the problem to be as clear and precise as possible in order to avoid the work that will follow being wrongly directed.

2. *Data Collection*: After the problem is identified, decision-makers should embark on this often most time-consuming step of the process. Depending on the resources available and the problem that was identified, this process could look differently. Knowledge pertaining to the physical, social and cultural setting must be collected, as this type of information can provide important evidence related to potential hazards and risks to a community. Both scientific and social research is required to compile this data, as well as a recognition of knowledge gaps.

3. *Interdependence of Policies*: Identify any pre-existing policies and programs within the region in order to avoid overlapping or conflicting objectives. Investing time and resources into the distribution of the knowledge gathered is an important element of this stage of planning. The public can provide valuable insight into the general attitudes of the collective society. It can shed light on how much risk the community is willing to accept or what are considered valuable assets to the region, which might influence decisions surrounding timelines, the tools used, and what areas will be prioritized.

4. *Constraints Assessment*: Prior to implementing a policy or programme, it is important to consider any constraints that might be experienced. One of the most common constraints in policy making is budget, but constraints such as 'manpower' and equipment should also be considered.

5. *Find the Solution*: Depending on the steps leading up to this point such as the knowledge available and the constraints to be considered, the solution might present itself as seemingly obvious and logical, or it might take serious ingenuity.

6. *Examine the Alternatives*: It can be easy to commit to the first promising or popular idea, but it is important to consider several possible 'solutions' to the problem at hand in order to ensure that the best possible strategy is what is moving forward. It might be important to remember that success is not only determined by the ability to reduce vulnerability within a community, but will also depend on its ability to benefit economic, social and natural aspects of the area.

7. *Political Acceptability*: Consider whether the new policy will be acceptable to Parliament or the relevant governing body. Furthermore, a proposed policy or strategy must also be acceptable to the specific region in which it will be administered. Specific local characteristics of the region and the people who reside there should be taken into consideration when determining the appropriateness of an action or plan

Figure 2 Seven steps to policymaking outlined by Robert Bryce (1981).

In comparing these steps with a more recent example, their significance in 2020 can be validated. Stahl and Cimorelli (2020) compile a similar list of decision-making steps that they call, "The Requisite Steps," that are almost identical to Bryce's (however not explained as thoroughly) (p.4). Although some of the authors' proposed steps lacked explanation, important to the current discussion is the significance placed on engaging with relevant stakeholders. It was noted that problems were often defined *on behalf* of the stakeholders and without consultation, resulting in "the selection and use of information and data [being] biased by the perspectives of the decision makers" (Stahl & Cimorelli, 2020, p. 12).

Once a policy option is selected based on the information gathered from the research and assessment phase, it is then essential to clearly identify the roles and responsibilities of those involved in the implementation of that option. While a timeline for implementation is a valuable addition to the process, it should be flexible enough to allow for unexpected delays that work to improve the overall effectiveness of the plan. Following implementation, it is essential to continue monitoring and evaluating the effectiveness of the project. The time frame for when reviews should be conducted will depend on the option selected, and the level of effectiveness can be determined by how

well the option was able to solve the initial problem (Van Proosdij et al., 2016). *Do any issues remain? How can the strategy or tools being used be adapted to reflect this?* When planning for and implementing short-term emergency management policies and practices, long-term capacity building (both within the organization as well as the larger community) should also be seriously considered. Without thinking of the 'long-term', a relief organization runs the risk of putting the region in question in a position of increased vulnerability. Again, the overarching goal of emergency management and disaster relief should be to reduce the vulnerabilities within a region, and by doing so, build its capacity.

Capacity-building has been defined as, "the underlying processes by which individuals, organizations, institutions, and societies develop the abilities (individually and collectively) to overcome problems, to accomplish specified tasks and functions, and to set and achieve objectives" (UNDP, 1998, p.5). The notion of community capacity-building (that which disaster relief should strive for), can be understood as, "a persisting process that is considerate of community aspirations, rather than a reactive response from organizations endeavoring to overcome community obstacles" (Franco & Tracey, 2019, p.693). It is widely agreed upon in disaster studies that the best way to achieve resilience to disasters is through the inclusion of all levels of government and society, including (but not limited to) the community level (Lassa et al, 2018; Mercer et al., 2009; Carby, 2015). Several scholars in the field have even argued that community-based disaster risk reduction has been the foundation of disaster management at the societal level (Zhang et al., 2013). While 'community-based' emphasizes the communities' control of disaster management processes, it is important to note that this can also include the facilitation from external parties such as government and NGOs (Lassa et al., 2018). In contrast to the authors who

argue that disaster management should be based on the *inclusion* of input from the community level, others argue that communities should create their own opportunities for disaster management, and that government should then be encouraged to participate in those programs (Maskrey, 2011).

> There are generally two approaches to community capacity-building. Primarily, it has been regarded as a bottom-up approach, focused on local solutions to emancipate the poor. Adversely, community capacity-building can be considered as a top-down process from the global level working to enhance skills, allowing both individuals and organizations to perform specific tasks…This later approach has mainly been adopted by organizations through education programs and knowledge transfer strategies in local communities within which they operate. (Franco & Tracey, 2019, p. 694).

Communities have the power to contribute a lot to their own level of preparedness and response capacities, however they simply do not control adequate resources and do not have the ability to influence decision-making processes in the way that they consistently need. Because of this, the success of community-based disaster management depends on the engagement and support of local and central government agencies and non-governmental organizations (Lassa et al., 2018; Mercer et al., 2009; Carby, 2015; Audefroy & Sanchez, 2017). This engagement and support might look differently depending on the location and specific characteristics of the area. This leads to the importance of analyzing disaster management not only as a whole, but also within a specific context.

While this study acknowledges some of the important characteristics of a top-down process as well as the necessity of having competent government and non-government disaster relief agencies, the perspective that drives this research is rooted in a bottom-up approach to capacity-building and disaster relief as a whole. Knowledge gained through experience with disasters is rooted in the society in which it takes place. The stories, gaps

in knowledge, and lessons learned all derive from these types of first-hand experiences. In order for emergency management organizations to come to the most well-informed decisions surrounding disaster management and relief, perspectives and knowledge should be incorporated from all levels. Local knowledge has the potential to be most useful in increasing the resilience of a community when it is used in combination with the latest technology and scientific assessment. The integration of these valuable resources allows both communities and decision-makers a more well-rounded and informed basis for identifying capacities and vulnerabilities, and ultimately for making decisions surrounding the disaster risks they face (Hiwasaki et al., 2014). When considering how best to incorporate such perspectives, Figure 3 offers some insights into the value of explicit models for disaster relief and approaches to capacity-building.

The value of explicit models for disaster relief and approaches to capacity-building

Six observations:

1. Whether articulated clearly, or underpinning decision-making implicitly, models are inevitably used. Some may be muddled, relatively naïve, built on half-digested experiences of past missions – not spelled out. There is much value in being explicit about models that may be influencing activities. Everyone can then at least share some common reference points, if only to disagree and thence select apparently better options;

2. Emergencies and complex disasters tend to bring together people from many cultural, professional and institutional backgrounds. Models, while <u>not</u> prescriptions, can provide explicit frames of reference for analyzing and agreeing on co-operative approaches;

3. Models, unless clearly defined, can be the power bases of the insecure. Models should not be viewed as some particular manager's 'secret weapon', but should be transparent to those engaged in the capacity-building processes (including those

whose capacities are to be strengthened). Ideally models used should have been discussed in earlier training programmes and hence be familiar to many, before they are 'put on the table' during planning and briefing activities.

4. Models are by definition simplistic. They are as much frameworks to facilitate relevant questions to be raised and alternatives refined, as are they potential guides for specific actions;

5. Models do not readily emerge from case experiences; they are not so much 'lessons learned', as they are 'frameworks for logic'. They are no substitute for the good judgement and the hard analysis that particular circumstances demand. There is usually a considerable intellectual gap between lessons explored from past experiences and the design of models. Models should not be seen to be more than scaffolding that planners and managers can find useful in detailing strategies;

6. Human behaviour is complex and even when a staged approach to capacity-building may be pursued (drawing upon insights from contemporary models), this still does not mean that people from different (or even the same) cultures will behave according to the anticipations of others.

Figure 3 In support of the value of explicit models for disaster relief and approaches to capacity-building, Ian McAllister presents six observations as outcomes of his field experience (2002, p.141).

When making decisions (policy-related or otherwise) related to disaster relief and development with the overarching goal of capacity building, the evaluation of that decision is essential. Rather than being viewed as an opportunity for outsiders (academics, 'experts', auditors, etc.) to criticize that which they do not fully understand, it should be viewed as simply the organization *learning from experience*. If the stages of the project cycle were appropriately documented and followed, it should not be too challenging to compare what actually happened with what was intended to happen (McAllister, 1993). It is essential to establish who will be responsible for the monitoring and evaluation of a project, and incorporate that information into the implementation plan. Often, these important steps do

not occur because the funding was not set-aside at the beginning of the project (Van Proosdij et al., 2016). This type of evaluation should be routine within any such organization, and while there are several different types of evaluations to consider, it is important that evaluations are conducted with an appropriate balance of outside objectivity and inside participation (McAllister, 1993). Figure 4 identifies some useful characteristics of a 'quality evaluation' that might be helpful when deciding upon the type of evaluation to pursue.

Characteristics of a 'quality evaluation':

1. *Impartiality*: The evaluation information should be free of political or other bias and deliberate distortions. The information should be presented with a description of its strengths and weaknesses. All relevant information should be presented, not just that which reinforces the views of the manager.

2. *Usefulness*: Evaluation information needs to be relevant, timely, and written in an understandable form. It also needs to address the questions asked, and be presented in a form desired and best understood by the manager.

3. *Technical adequacy*: The information needs to meet relevant technical standards—appropriate design, correct sampling procedures, accurate wording of questionnaires and interview guides, appropriate statistical or content analysis, and adequate support for conclusions and recommendations, to name but a few.

4. *Stakeholder involvement*: There should be adequate assurances that the relevant stakeholders have been consulted and involved in the evaluation effort. If the stakeholders are to trust the information, take ownership of the findings, and agree to incorporate what has been learned into ongoing and new policies, programs, and projects, they have to be included in the political process as active partners. Creating a facade of involvement, or denying involvement to stakeholders, are sure ways of generating hostility and resentment toward the evaluation—and even toward the manager who asked for the evaluation in the first place.

5. *Feedback and dissemination*: Sharing information in an appropriate, targeted, and timely fashion is a frequent distinguishing characteristic of evaluation utilization. There will be communication breakdowns, a loss of trust, and either indifference or suspicion about the findings themselves if: (a) evaluation information is not appropriately shared and provided to those for whom it is relevant; (b) the evaluator does not plan to systematically disseminate the information and instead presumes that the work is done when the report or information is provided; and (c) no effort is made to target the information appropriately to the audiences for whom it is intended.

6. *Value for money*: Spend what is needed to gain the information desired, but no more. Gathering expensive data that will not be used is not appropriate—nor is using expensive strategies for data collection when less expensive means are available. The cost of the evaluation needs to be proportional to the overall cost of the initiative.

Figure 4 Characteristics of a quality evaluation, quoting directly from the World Bank (Kusek & Rist, 2004, pp.126-127).

Research conducted by Scott et al. (2016) highlights the need for monitoring and evaluating systems within disaster management and capacity development programmes to shift focus away from activities and outputs, and focus on outcomes and impact. Additionally, such outcomes and impacts must be clearly described if they are going to help professionals improve their work (Beerens et al., 2020). Important to remember is that "an evaluation is not an end in itself; rather it is a means to achieving a higher goal or purpose" (Beerens et al., 2020 p.589). Not only are evaluations meant to benefit the organization that arranges them, but the lessons that come out of them should be shared with other departments and perhaps even other relevant organizations. A common thread that links *all* of these concepts together is that their overall usefulness to the field of disaster management is dependent upon if and how they are used in conjunction with one another. Drawing on specific experiences of two of the largest international organizations in the

world, Chapter 3 will offer some insights into how the Red Cross and World Bank engage with lessons learned approaches, institutional memory, policymaking, capacity building, and evaluations.

CHAPTER 3: INSTITUTIONAL MEMORY-BUILDING INSIGHTS FROM INTERNATIONAL DISASTER RELIEF EXPERIENCES

3.1 Insights From Two International Organizations

The International Federation of Red Cross and Red Crescent Societies (IFRC) and the World Bank Group (WBG) have a significant history of testing and reviewing their disaster preparedness/response and relief/development policies and procedures. The IFRC is a leading humanitarian organization that provides support to regions that experience disaster or conflict. Regardless of the nature of disaster, the Federation works to link and integrate relief, rehabilitation and development through an analysis of the local political, social and economic context. The IFRC acknowledges that in order to ensure that both short-term and long-term needs are met, supporting and strengthening the capacities of National Societies is essential (IFRC, 2020). The Canadian Red Cross, one of the many National Societies operating under the IFRC, has several branches located in Nova Scotia (CRC, 2020). As will be seen within the case studies in Chapter 4, in the event of a disaster in the region, the Red Cross is almost always involved in some capacity. Guided by the same Fundamental Principles as the IFRC, the Canadian Red Cross (more specifically, the Nova Scotian branches), are largely responsible for responding to disasters with an approach that best suits their unique region. In saying this, due to the integral link between the IFRC and its National Societies, local Red Cross groups will inevitably be impacted by the decisions and functions of the International Federation, making it an important organization to discuss. Drawing on a set of 'lessons learned' from within the IFRC, the chapter will explore the organization's experience in developing and adapting policies and projects focused on community engagement, gender equality and support for migrants.

While the World Bank Group does not have any branches in Nova Scotia, it remains a relevant organization to include as it has invested not only in the financing of major development projects over many years, but also in broader development planning approaches and the assessment of results. Many of their ideas have reached and remain integral to Canada, and even Nova Scotia. Much of the World Bank's involvement in disaster-related activities is focused on disaster risk management, with the Group managing the Global Facility for Disaster Reduction and Recovery (GFDRR) (The World Bank, 2020). The 'Inclusive Community Resilience' program operates within this branch of the WBG, and is supported by several partner organizations including the IFRC. The International Committee of Red Cross (ICRC) and the World Bank recently established a strategic partnership focused on supporting those who live in extreme poverty, as well as suffer from the impacts of fragility, conflict and violence (The World Bank, 2018). Like the IFRC, the WBG also engages in important disaster management activities, however Chapter 3 will primarily focus on some of the useful examples of institutional memory-building strategies from within the Bank. It will highlight the World Bank as an important 'learning organization' to explore, and briefly discuss how the WBG has managed to operationalize a 'lessons learned' approach as it works to reduce poverty and build prosperity around the world.

3.1.1 International Federation Of Red Cross And Red Crescent Societies

The Red Cross Movement can be traced back to Henry Dunant, a Swiss businessman whose 1862 book, *Un souvenir de Solferino*, led to the formation of the "International Committee for Relief and Wounded Military Personnel" (which would later

become the International Committee of the Red Cross (ICRC)). Dunant's work also led to the calling of a diplomatic conference in Geneva, and as a result, the "Geneva Convention for the Amelioration of the Condition of the Wounded in Armies in the Field" in 1864 (McAllister, 2002). Founded in 1919, the IFRC began with a strong emphasis on wars and war-linked activities. Prior to the Second World War, focus was largely placed on "care for the wounded, care for war-displaced persons, tracing, and diplomatic negotiation for the promulgation of humanitarian law to cover such issues as the treatment of prisoners of war," with most activities taking place within Europe (McAllister, 2002, p.110). With the Second World War came considerable growth in both the scale and scope of Red Cross activities, which also brought significant challenges with respect to its fundamental principles. How can an organization that is built off of neutrality serve as a pro-active proponent of human rights? This became (and continues to be) a serious question to consider, especially when looking at examples such as the German Red Cross and its conduct surrounding "the Nazi apparatus" (McAllister, 2002, p.111). Figure 5 offers some lessons from some of these early experiences of the Red Cross Movement. Now the largest humanitarian organization in the world, the IFRC comprises 192 member Red Cross and Red Crescent National Societies (with more in formation), as well as a secretariat in Geneva and over 60 delegations around the world. "In many respects the IFRC is the international secretariat of the National Societies" (McAllister, 2002, p.110).

Some lessons from early experiences of the Red Cross Movement:

- The value of the Movement being, and being recognized as, uncompromisingly neutral;
- The importance of the Red Cross and the Red Crescent as internationally-respected emblems of humanitarian service, neutrality and non-aggression;
- The under-pinning importance of volunteers across each country, with basic training– able to respond quickly to crises, both at local levels and between regions; and
- The value of the Geneva Conventions (both as entry points and as foundations for international humanitarian law) and also of a responsive and dynamic body of "principles and rules"- to guide conduct across the Movement.

Figure 5 Several lessons drawn from the earlier experiences of the Red Cross Movement (McAllister, 2002, p.111).

Without discrimination as to nationality, race, religious beliefs, class or political opinions, the IFRC focuses its work on promoting humanitarian values, disaster response, disaster preparedness, and health and community care. Its vision is to, "inspire, encourage, facilitate and promote at all times all forms of humanitarian activities by National Societies, with a view to preventing and alleviating human suffering, and thereby contributing to the maintenance and promotion of human dignity and peace in the world" (IFRC, 2020). In pursuit of this vision, decisions are constantly being made surrounding appropriate actions that should be taken towards achieving the organization's goals. Like many international non-governmental organizations, it can be challenging to secure resources for longer-term disaster prevention, preparedness and post-disaster activities, in addition to the more traditional (and also important), forms of emergency aid, such as food and supplies (McAllister, 2002).

The value of experience and knowledge held within an organization can be seen more clearly by examining the policies and practices that exist within that association. As previously discussed, lessons learned mean little if they are not translated into meaningful action. In exploring this idea, one might consider reviewing a specific example of lessons gathered from inside the IFRC in order to gain an understanding of what a 'lesson learned' might look like, and how a policy might reflect it. While the group of Red Cross and Red Crescent officials informing this particular set of lessons learned was not assembled with any careful plan in mind (more-so who was available), the collective experiences of the group remain broad and developed over the span of many years (McAllister, 2016).

Example of 'lessons learned' within the IFRC:

1. For planning and co-ordination purposes quickly establish dates and places for key policy and planning meetings. These provide time frameworks for decision-making, action, coordination and evaluation. They provide a sense of strategic discipline to the process of relief and development. After initial emergency planning, they might – for example – be spaced as one month, four months, ten months, eighteen months, 2½ years after the disaster. This sets an immediate 'time skeleton'; modifications can later be made, if warranted, but generally they should be avoided.

2. Within the initial four months after a major disaster/revolution, refrain from making decisions about any major capital expenditures – to ensure adequate longer-term planning and coordination has in fact occurred.

3. Undertake only *emergency* repairs, minor building expansions, minor 'vulnerability' reduction expenditures – so that there is adequate planning for the longer-term solutions. At the same time, ensure a financial structure which will result in orderly funding for the longer term requirements and not simply the shorter term and immediate necessities.

4. Draw together two distinct teams – a short-term "operational/ coordinating team" and a longer-term "analysis and planning" team. Do *ensure* they are linked

adequately. Do *not* delay the identification of *both* teams. Be clear about management reporting systems.

5. Ensure local traditions, cultures and their insights are recognized – as well as make sure that immediate planning for, and assistance to, is given to those who really are the most in need and not just the most vociferous. Women, children, the poor and elderly tend to be the *most* vulnerable. Outsiders are often slow to recognize how best to assist the most vulnerable – the importance of genuine and representative local participation cannot be overemphasized.

6. Recognize that the disaster already has a setting – economic, social, cultural, political … regular systems must not be disrupted more than is essential and reasonable … For example, massive amounts of imported food aid that swamp the local setting can serve to destroy a local market system that might, if recognized, both allocate essentials efficiently and provide price incentives for future planting of crops etc. … local systems need to be understood… Aid will have an inevitable impact on these systems, care should be taken that it does not destroy existing capabilities.

7. Transport and equipment imported during a crisis will require maintenance and spare parts; medicines will require storage and labels will need to be readable in the local languages; goods will require both storage and distribution systems that are *workable* and efficient … *the importance of standardization cannot be over-emphasized.* In Ethiopia, for an example, the vehicle maintenance division of the Red Cross is having to work with ninety-one different makes/varieties of vehicles – a maintenance and spare parts nightmare – many instructions arrive in foreign languages …

8. Standard categories and standard packages of assistance can be particularly important in emergency settings. People then know what they can expect so they can plan and adjust accordingly. Obviously such provisions need to relate to the culture, climate, and so on.

Figure 6 One example of 'lessons learned', quoting directly from Ian McAllister's, *Projects in Search of Relief With Development* (2016, pp.85-87).

While the lessons learned in Figure 6 stem from the experience of some dozen experienced Red Cross officials, it is worth considering their value in the absence of steps

towards meaningful action. Lessons learned through experience hold the power to spark meaningful change, but their worth cannot be fully realized without action. The decisions that are made in the present will have direct and indirect consequences on the future, emphasizing the need for present operations to be informed by a genuine understanding of the past, but also considered within the current context. To help consider the context in which relief and development activities will take place, strategies such as the IFRC's Strategy 2030 have been developed, which calls for a shift of leadership and decision making to the local level– meaning communities are placed at the centre of the relief/development process. The organization acknowledges that while a community-level focus has been a long-standing commitment of the IFRC, there is a gap that exists between 'rhetoric and reality' (IFRC, 2020). In addressing this gap, the IFRC published a poster (Figure 7) that highlights five strategic changes and actions that can be adopted in support of fostering stronger relationships with communities (in this case, in Africa).

Changes and actions for fostering stronger community relationships:

1) Strengthen understanding of and capacity to implement community engagement across the Movement.
2) Integrate community engagement and accountability into Red Cross Red Crescent ways of working so it becomes a standard approach for all staff and volunteers.
3) Increase documentation of successes and lessons learned to enhance Movement-wide understanding and ownership of community engagement and accountability.
4) Increase organizational support and resourcing to institutionalize and implement community engagement and accountability.
5) Promote a culture of accountability internally among Movement members and externally with communities and partners.

Figure 7 Quoting directly from IFRC poster highlighting strategic changes and actions that can be adopted in support of fostering stronger relationships with communities (IFRC, 2020).

The collective memory of an institution can be strengthened with the inclusion of different voices. The inclusion of memories and knowledge held by women and other marginalized groups can add important perspectives that might only be available through lived experience. Gathering, documenting and translating this knowledge into practice works to create a more inclusive institution, and one that can better serve all those who find themselves in vulnerable positions. When determining both the vulnerabilities and capacities that exist within a particular region, input from the local community can provide valuable insights that might otherwise be missed (Anderson & Woodrow, n.d.). The IFRC Gender Policy works to promote gender balance within the organization and include more women in decision-making processes at all levels. The policy also works to promote a balanced representation of men and women within the organization, representing the diversity of those it works to support. Additionally, the Gender Policy prioritizes the "mainstreaming of gender perspectives into programming at all levels over gender-targeted programmes," something that is largely missing from many capacities and vulnerabilities analyses (IFRC, 2013, p.8). Additionally, quoted directly from the IFRC Strategic Framework, the IFRC Pledge 2093 on Gender (2012-2015), implemented at the 31st International Conference of the Red Cross and Red Crescent in 2011 pledges to:

A) Implement the IFRC Gender Strategy;
B) Systematically integrate a gender perspective into all policy work;
C) Advocate for policies and legislation that tackle stigma and discrimination on the basis of gender;
D) Create conditions favourable for gender balance at all levels in governance, management and staff and for gender-balanced representation in statutory bodies and meetings, where possible;
E) Integrate a gender dimension when revising statutes;
F) Promote and encourage work to understand a gender perspective in international humanitarian law (IFRC, 2013, p.8).

When considering the lessons stemming from IFRC's engagement is disaster relief and development, and particularly those gathered through experience in the field, it should be done with an awareness of some of the issues that might stem from this type of engagement. Many institutions do not systematically test the policies, projects and procedures that are direct results of such experiences. Lessons are sometimes simply adopted, and (likely) more often, forgotten (McAllister, 2016, p. 72). When examining past and current policies within the IFRC, a continued effort to re-examine and determine the effectiveness of existing policies seems to take place. For example, while the Gender Policy introduced in 1999 does well to reflect the focus on gender equity at that time, as well as the different roles and needs of men and women within different societies, it does little to actively spark change within IFRC Secretariat or National Society groups. It was recognized that there was a gap in actively opposing gender discrimination within these groups, and in actually changing attitudes and behaviours towards creating a more equitable space for men and women. As discussed by Scott et al., there is a need for evaluations to shift focus away from activities and outputs, and onto outcomes and impact (2016). Evaluations conducted by the IFRC Secretariat and National Societies have demonstrated that the approach taken by the Gender Policy had limited effectiveness, and in turn, limited the potential overall humanitarian impacts of a gender-equality approach (IFRC, 2013).

Commissioned by the IFRC Secretariat's gender taskforce in 2007 in response to the results, a thorough review of the impact of the gender policy took place. "The Gender Policy Review further confirmed such findings and strongly recommended that the IFRC and National Societies move towards an equality approach to gender, utilizing both gender

mainstreaming and targeted systematic approaches where appropriate to specific zones and regions" (IFRC, 2013, p.11). It was also highlighted through this review that much of the planning and implementation towards emergency and development programming within IFRC and National Societies continues to move forward without adequate attention to gender. The Gender Policy Review recommended instituting a global gender strategy and performance monitoring framework, along with supporting institutional measures that could ensure programming within the organization carefully considered gender dynamics (IFRC, 2013). The IFRC Pledge 2093 on gender (2012-2015) evaluation criteria are as follows:

A) At least 50 percent of the National Societies sign up to the pledge;
B) The *IFRC Gender Strategy*, including the performance framework, is implemented by at least 50 per cent of the National Societies;
C) Regular updates of National Societies' statutes and internal regulations include the goal of achieving gender balance at all governance and management levels, including general staff, members and volunteers by the year 2020;
D) IFRC and National Society policies adopted between 2012 and 2015 and subsequent work have a focus on gender-related issues;
E) Gender-based commitments are systematically included in annual IFRC and National Society programme work plans and budgets, reports and tools, with regular monitoring of achievements;
F) There is evidence of improved gender balance within statutory bodies and at statutory meetings (IFRC, 2011).

By documenting evaluation criteria, the successes and shortcomings of a policy or program (or in this case, pledge) can be systematically considered. Through establishing a baseline of what the project should accomplish, the question of whether or not it is successful is not (as) open for interpretation. Looking at the Pledge 2093 on Gender as an example, either 50 percent of National Societies signed up to participate or not. If only 30

percent of National Societies pledged their commitment to gender equality, then something would need to be addressed and ideally adapted.

Exploring beyond the example of gender equality, the IFRC also maintains a commitment to helping those vulnerable to migration and displacement. This includes assisting and protecting asylum-seekers, refugees, internally displaced persons (IDPs) as well as vulnerable migrants. The IFRC adopted its first resolution on issues surrounding migration and displacement in 1981. From that point onwards into the 1990's, numerous resolutions on such issues were adopted.

The IFRC's Strategy 2010 was put in place in 1999 to focus the efforts of National Societies for the years ahead. It highlighted the importance of National Societies taking an active role in influencing community behaviour surrounding discrimination against asylum-seekers, as well as working to resolve conflicts in the community (Moretti & Bonzon, 2018). The IFRC has a long history of working to assist refugees, returnees and displaced persons, however its approach had to be reconsidered with the introduction of reference to "migrants" and "migration", with the first instance likely being seen in a 2001 report submitted to the Council of Delegates by the ICRC and the IFRC (Moretti & Bonzon, 2018). The document made reference to "economic migrants" and the vulnerabilities and humanitarian needs that come along with that status. The issue was brought forward as an expected challenge in the years to come, and as incentive to develop proposals which address the gap. Through the process it became clear that there was little consistency in response to discrimination and xenophobia across the National Societies.

The issue of migration remained at the forefront of National Societies throughout the next decade, leading to the establishment of several different policies, plans and

resolutions. Regional conferences were periodically held as a means of "challenging and organizing National Societies' priorities, cooperation and humanitarian diplomacy efforts" (Moretti & Bonzon, 2018, p.161). The inclusion of "migration" into IFRC policies and practices is a direct result of a 'bottom up' process, stemming from work by the Red Cross and Red Crescent Regional Conferences as well as direct consultation with National Societies and the migrants with whom they work to support (Moretti & Bonzon, 2018).

The 2009 Migration Policy, implemented by 186 National Societies, showcases the IFRC's commitment to responding to the different local situations and views that exist amongst its members. The Policy was described to be, "clearly addressed to community-based staff as the primary actors that translate the humanitarian imperative into action," which helps explain why it was a rather simple approach, and one with little emphasis on certain legal distinctions (Moretti & Bonzon, 2018, p.165). In creating a policy that encompasses the guiding principles of the organization while leaving some of the details to be sorted out by the respective Societies, there is room left for any necessary adaptations or implementation measures which might result in a more meaningful and far-reaching policy overall. Different regions experience a wide range of systems of governance as well as overall societal and political dynamics, however through the incorporation of a 'bottom-up' approach, valuable policies might become more accessible to more regions by allowing these regions to implement them in a way that functions for them– an important lesson coming out of IFRC's experience. Allowing smaller, more specific regions, the opportunity to take stock of their own existing capacities and vulnerabilities allows for the opportunity to 'tailor' policies and programs to better fit their unique situations. In saying this, with this approach comes the reality that there will likely be some National Societies who will not

prioritise specific activities in favour of migrants. This issue came to light with the crisis in Europe in 2015, leading to yet another reconsideration of the approach by IFRC (Moretti & Bonzon, 2018).

In 2011, the IFRC conducted a survey of National Societies to learn more about the activities in which they were engaged surrounding migrants, and to better understand some of the challenges being faced. This example of actively evaluating current policies and practices brought to light several successes within the organization, and equally important, several areas that warranted further attention. In conducting this exercise, it became clear that the challenges being faced by many of the National Societies were, in fact, similar. The survey showed that the groups were having difficulty accessing people at all stages of the migratory experience, particularly with respect to 'irregular migrants' (Moretti & Bonzon, 2018). In gathering this knowledge, the IFRC was in a position to take appropriate action to address these issues. Similar exercises took place over the course of the next five years (and continues today), working to address gaps in the planning and implementation of policies surrounding migration. This is simply one example of how continuously monitoring and evaluating existing policies can lead to necessary and meaningful adaptations. Furthermore, this example showcases how the inclusion of the local level, as well as the integration of a wider range of perspectives, can lead to more appropriate decisions that better address both the capacities and vulnerabilities within a region.

Drawing on institutional memory is vitally important to decision-making processes within the realm of disaster relief and development. In saying that, it is also critical that context be taken into consideration, and for priority to be placed on continuously monitoring and evaluating the effectiveness and appropriateness of the resulting decisions.

The institutional memory of the IFRC (or any group) should not be 'bottled up' and stored away, as it is an invaluable resource (McAllister, 1993). As will be discussed in the following section, the World Bank Group serves as a useful example of how lessons coming out of an organization can be meaningfully applied and shared both within the organization as well as beyond. The World Bank Group is an important organization to consider when discussing institutional memory-building and the informing of disaster relief through the lens of a capacities and vulnerabilities analytical framework. The extent to which people are both vulnerable and capable of coping can often (at least in part) be determined by economic and political factors. Inadequate social protection and poverty are factors that are generally associated with increased vulnerability, and although the IFRC engages in activities that aim to reduce vulnerabilities, poverty reduction is not the main focus of Red Cross and Red Crescent work (IFRC, 2006). Poverty reduction is a crucial factor in working to increase capacities, making the World Bank Group an important organization to discuss.

3.1.2 The World Bank Group

Organizations will often struggle to produce generalized recommendations that have meaning outside of the context of a specific disaster, and in doing so, fail to connect observations of challenges with implementations of solutions (Savoia et al., 2012). To address this challenge associated with a 'lessons learned' approach to knowledge management, the linking of lessons learned with the planned execution of improvement efforts is recommended (Savoia et al., 2012). The World Bank Group's (WBG) dedication to fostering a strong institutional memory and effort to support local capacity building can be seen through its commitment to making knowledge available to those who can use it in

the form of online publications and a sophisticated archival system. In addition to this, an analysis of WBG reports and publications suggests that the institution commits itself to continuously monitoring and evaluating decisions that have been made, and remains accountable by releasing the resulting reports to those involved. Chief Economist for Africa, Albert Zeufack, notes, "while the World Bank is certainly best known as a donor institution, it is also a knowledge-sharing institution" (World Bank Group, 2017).

Consisting of 189 member countries, the World Bank Group serves as a global partnership between five institutions– all working towards a common goal of reducing poverty, building shared prosperity and promoting sustainable development around the world. The International Bank for Reconstruction and Development (IBRD), the International Development Association (IDA), the International Finance Corporation (IFC), the Multilateral Investment Guarantee Agency (MIGA), and the International Centre for Settlement of Investments Disputes (ICSID) make up the World Bank Group, with each institution dedicated to focusing on specific areas of support. While the five institutions have their own country memberships, governing boards, and articles of agreement, they work together to serve partner countries as the World Bank Group. Working together, the different institutions have the capacity to connect global financial resources, develop innovative strategies and transmit a wide range of knowledge (World Bank Group, 2020).

As is the case for most organizations, the WBG has faced and continues to face valid criticisms of certain projects and questioning of underlying motivations, with some scholars challenging the organization's legitimacy as a knowledge actor (Kramarz & Momani, 2013). While such issues certainly warrant further discussion, the positioning of the WBG as one of the largest international organizations in the world calls for the

inclusion of some of its knowledge-based activities in the current discussion of learning lessons through experiences. Approaching such criticisms through a 'capacities and vulnerabilities' lens (as well as cost-benefit) might also be a useful exercise. The pre-existing capacities and vulnerabilities of a region might very well look differently depending on who is identifying them. This is when it is essential to consider where knowledge and information is coming from, and by whom it is shared. The same could be said for a cost-benefit analysis. If it is determined that the cost of moving forward with a particular project or relief effort outweighs the benefit, then another option should be explored (including the option of 'doing nothing').

In 1955, the World Bank established the Economic Development Institute (EDI) as a sophisticated training facility for 'developing country' officials as well as a center for development analysis (World Bank Task Force on the Economic Development Institute, 1983). As the years went by and the World Bank continued to develop, the EDI eventually became the World Bank Institute (WBI) in 1997. Throughout the transition, the most noteworthy change was the Institute's shift from acting as the provider of training courses to serving as "the arm of the World Bank for facilitating learning and capacity building in countries" (World Bank, 2005, p.33). The World Bank Institute's shift into the realm of technology and new forms of knowledge dissemination and exchange is noted to have been sparked by the first Global Knowledge conference held in Toronto in 1997. The following year saw the establishment of an evaluation unit and coordinators for the regions operating within the World Bank, ensuring that programs remain relevant and positively impactful (World Bank, 2005). As discussed in relation to the IFRC, while learning lessons through experience and drawing on institutional memory to inform decisions is an important

practice within disaster relief and development organizations, it is critical that this knowledge be continuously evaluated and monitored. The WBG holds itself accountable to those with whom it engages through several different mechanisms including annual reports, access to information, inspection panels, independent evaluations and several other policies and procedures (many of which can be researched via the Bank's website) (Ravallion & Wagstaff, 2012). The overall goal of continuously monitoring and evaluating the decisions and actions made within development and disaster relief organizations is to promote knowledge and learning within the institution as well as ensure that the efforts being made are increasing capacities within a region and reducing vulnerabilities.

Central to much of the decision-making within the WBG is the use of a cost-benefit analysis (World Bank Group, 2020). Perhaps Mary Anderson explains the analytical framework in the simplest of terms when she writes,

> Benefit/cost analysis involves three basic steps. First, one enumerates all the benefits and costs of an expected activity; second, one puts monetary values on all of these; and, third, one discounts all future benefits and costs into present value terms. Based on these three steps, one would then choose the option in which the net present value of the action is both positive and greater than that of all available alternative actions. In situations where there are known risks of natural hazards, the inclusion of the probability of a crisis event's occurring is essential to solving the problem (1990, p.8).

There are methodological issues associated with each of these steps. The issue most relevant to the current discussion, however, is that not all costs or benefits related to disaster relief are quantifiable. For example, it can be particularly challenging to determine costs and benefits associated with environmental, social, political or psychological factors.

> How much, precisely, is the sense of security which comes from living in earthquake resistant housing worth? And, even if this can be measured for any individual, what is the political benefit derived by a government which imposes

> building codes on groups of people (or conversely, the political cost to a government which does not do so)? (Anderson, 1990, p.8).

It might be useful to approach such challenges by first considering the ways in which the WBG gathers information and knowledge that will be used to make decisions related to its projects, and how those decisions are later evaluated. The value of local knowledge acquisition (as merely opposed to the transfer of knowledge from donor to recipient) is becoming increasingly clearer within international organizations, including the WBG (Kusek & Rist, 2004; Ravallion & Wagstaff, 2012). In order to help decision-makers track and evaluate a project, program, or policy, a 'results-based monitoring and evaluation' (M&E) tool was developed by the World Bank in 2004. The system serves as a means of providing performance feedback to governments, NGOs, the private sector, and any stakeholder interested in 'better performance'. Tailored to the region in which they are implemented, M&E systems work to provide feedback about the progress, successes and failures of projects, programs, and policies in order to improve performance, and demonstrate accountability surrounding results. Considering the systems within the context of development, "evaluation feedback has been broadly defined as a dynamic process which involves the presentation and dissemination of evaluation information in order to ensure its application into new or existing development activities… feedback, as distinct from dissemination of evaluation findings, is the process of ensuring that lessons learned are incorporated into new operations" (Kusek & Rist, 2004, p.141).

Monitoring and evaluating systems promoted by the World Bank can be used as an institutionalized form of learning and knowledge. In the pursuit of building a 'learning organization' as well as advancing towards meaningful outcomes, learning must be

incorporated into the entire project cycle. Information should be translated and disseminated throughout the organization in order for it to become 'applied knowledge' (Kusek & Rist, 2004). When an outcome is achieved, it should be accompanied by more evaluating, monitoring and learning in order to determine appropriate steps forward. While the concept of incorporating knowledge into the entire project cycle might sound reasonable to most organizations, that is not to say that it comes without challenges. Some obstacles that can prevent learning are presented in Figure 8.

Some obstacles that can prevent learning:

1. *Organisational culture*– some organisations have a culture where accountability tends to be associated with blame. This has the effect of discouraging openness and learning. In other [organizations], it is more acceptable to own up to mistakes and see these as opportunities for learning, recognizing that there is often as much to learn from poorly performing projects as there is from success stories.

2. *Pressure to spend*– learning takes time, and pressure to meet disbursement targets can lead to shortcuts being taken during project planning and approval stages, with lessons from previous experience being ignored or only selectively applied in the haste to get decisions through.

3. *Lack of incentives to learn*– unless there is proper accountability… built into the project cycle there may be little incentive to learn. This is particularly the case when staff or consultants shift from task to task, and have generally moved on long before the consequences of failure to learn are felt.

4. *Tunnel vision*– the tendency of some staff or operational units to get stuck in a rut, carrying on with what they know, even when the short-comings of the old familiar approaches are widely accepted.

5. *Loss of institutional memory*– caused by frequent staff rotation or heavy reliance on short-term consultants, or by the weakening or disbanding of specialist departments.

6. *Insecurity and the pace of change*– if staff are insecure or unclear about what their objectives are, or if the departmental priorities are frequently shifting, this can have an adverse effect on learning.

7. *The unequal nature of the aid relationship*– which tends to put donors in the driving seat, thereby inhibiting real partnerships and two-way knowledge sharing.

Figure 8 Quoting directly from the World Bank's "Ten Steps to a Results-Based Monitoring and Evaluation System", the Organisation for Economic Co-operation and Development (OECD) assembled a list of possible obstacles to the process of learning (Kusek & Rist, 2004, p.145).

Through a variety of policies and programs, the World Bank Group allows for its data, knowledge and research to be accessed by those outside the institution. The World Bank Group Archives serves to protect the institutional memory of the WBG, and in 2010, launched the World Bank Access to Information Policy that would provide the public with access to records of the International Bank for Reconstruction and Development and the International Development Association. The Archives consist of textual records documenting lending operations, economic and sector studies, policy development, public relations, and governance, as well as a variety of photographs, maps, video, and audio records (Kramer-Smyth, 2016). While one might also be interested in what types of knowledge and 'lessons learned' are stored in the 'not-so-publicly accessible' records, the WBG Archives serves as a good example of thoughtfully preserving institutional memory within an organization while also providing other organizations and individuals valuable insights into shared issues.

While many of the documents that can be found in the archives consist of valuable information surrounding development policies and practices, interviews with staff serve as

a means of collecting different knowledge that might not appear in a more formalized document. The World Bank Group Archives began its Oral History Program in 1961, was restarted in 1981, and continues today. The program is responsible for the interviewing of hundreds of past and current WBG staff, documenting the history and evolution of the organization. The interviews are preserved as transcripts and serve as learning and knowledge tools for WBG staff, partners, clients and researchers who seek to learn more about development policies and practices of the World Bank. The interviews typically focus on the interviewees background, reasons for joining the Bank, their career, as well as an overall assessment of the WBG and some of its important members (World Bank Group, 2020). While there will surely still be knowledge that is lost with the 'moving on' of members of the organizations, programs such as the Oral History Program might be useful in capturing at least some of the important lessons stemming from the experience of those operating within the Bank.

The WBG Archives and the affiliated programs such as the Oral History Program represent some 'good practices' in knowledge management and institutional memory-building, however that is not to say these examples are free of challenges. One issue that might be worth considering while exploring the example of the WBG Archives is that of accessibility. Kramer-Smith's article explains that most records are only accessible to those who actually visit the Archives in Washington, DC, which of course leaves many people without reasonable access to this information. To address this gap, the WBG launched an online version of its archives in the spring of 2015, and while the development of the service was no easy task, it most certainly extends the reach of some of the knowledge held within the WBG (Kramer-Smyth, 2016). While an online resource is still not helpful to

everyone, one can hope that the knowledge held within the Archives will be translated into meaningful action and identified through the analyses of different WBG projects, policies and procedures.

The World Bank Group makes clear its understanding that regardless of how 'effective' a development project might be, it requires a good policy and institutional environment in order to function properly (World Bank Group, 2020). The region in which projects are being implemented must be in a position to accept aid. The quality of macroeconomic environments, trade regimes, and property rights, as well as any public bureaucracies that deliver education, health and other public services are important factors to consider when attempting to implement a sustainable development or relief strategy (The World Bank, 1998). It is essential that development projects as well as disaster relief look beyond the proposed program or project and consider the bigger picture. Based on the continuous research, training and publications coming out of the WBG, it would seem as though the institution considers this carefully. I would argue that this same principle should also be applied within an institution. The way in which an institution functions internally, matters. The decisions that are made surrounding how knowledge is generated, shared and applied is significant when considering the quality of projects, programs and policies that come out of that institution. The dedication to uncovering, preserving and sharing lessons and knowledge that can be seen when researching the World Bank Group's internal operations situates the institution into a position where it can contribute meaningful assistance to those around the world.

After a brief analysis of two of the largest international organizations in the world, and some of their experiences with collecting and applying knowledge, as well as

reviewing some resulting decisions, similar experiences will be sought from Nova Scotia in the following chapter. Although the Nova Scotia Emergency Management Office most certainly falls on the smaller end of the scale of organizations engaged in disaster relief activities, the provincial office consistently demonstrates its dedication to improving its ability to reduce vulnerabilities and increase capacities in Nova Scotia. Through an analysis of three specific experiences with disasters in the region, the NS EMO serves as a useful example for exploring effective 'lesson learned' approaches to disaster relief. It offers some helpful insights into some of the key concepts presented in the previous chapters, as well as highlights how an organization (much) smaller than the IFRC can begin to approach similar disaster relief challenges.

CHAPTER 4: NOVA SCOTIAN EXPERIENCES WITH DISASTERS: THREE CASE STUDIES

4.1 Swissair Flight 111 Crash (1998)

On the evening of September 2, 1998, Swissair Flight 111 was travelling from New York City to Geneva, Switzerland. The plane was in the air for roughly 70 minutes before crashing into the frigid waters of the Atlantic Ocean, 13 kilometers off the shore of Peggy's Cove, Nova Scotia (Wilson-Smith et al., 2013). All 229 people on board were killed in the crash, and the small town on the coast of Nova Scotia became the scene of an extensive relief effort.

The crash of Swissair Flight 111 presented emergency personnel with a unique disaster– one unfamiliar to those in Nova Scotia. Due in part to the severity of the disaster, as well as the limited number of paid emergency and disaster response personnel working within the region, some responsibilities were handed out to the surrounding communities and numerous volunteers. Assistance from neighbouring provinces was offered and gratefully denied, which would later be recognised as a missed opportunity to provide valuable experience to surrounding regions. With volunteers working for up to 34 days, scouring the shoreline for evidence and remains, many of those involved in the recovery mission were left traumatized by what they experienced (Mitchell et al., 2006). It is difficult to imagine how a region could prepare for a disaster of this magnitude, one that no one would ever hope to experience.

Due to the nature of the disaster, it quickly became clear that those involved in the relief effort would need an informed and coordinated response moving forward. Coordination is a vitally important element of a successful, even functional, disaster relief

effort. In the case of the Swissair disaster, Maj. Michel Brisebois, head of the Rescue Coordination Centre in Halifax was first to receive news of the crash. With the sole mission of locating and rescuing survivors, Brisebois quickly arrived at the command centre and made the key decision to also bring in representatives from the RCMP, the Emergency Measures Organization, as well as Swissair, so that efforts could be properly coordinated and executed. The decision to bring together representatives from different organizations in one room is remembered as one of the most crucial decisions to come out of the first night (Toughill, 1998). The air disaster is one of such extreme magnitude that it could be placed in the history books alongside disasters such as the SS Atlantic, the Titanic, and the Halifax explosion, all impacting the region. Canada's Transportation Safety Board, one of the teams tasked with sorting and inspecting the debris, reports the investigation costing the country $57 million over the course of five years, making it the most expensive transport accident in Canadian history (BBC, 2003).

Linda Mosher, the administrative officer in the office of Nova Scotia's chief medical examiner at the time of the disaster, spoke to the extreme coordination effort that was required in response to the crash. With a lack of available resources, there was a need for enterprising actions. Doctors tasked with identifying the body parts of the passengers onboard flight 111 were set up in a makeshift morgue in Dartmouth, using an antiquated system dating back to the Titanic. In an interview conducted in the months following the disaster, Mosher recalls meeting with a carpenter, electrician and plumber within hours of Swissair flight 111 crashing into the Atlantic, to plan the construction of a morgue in Shearwater, Nova Scotia. Mike Lester, director of the Emergency Measures Organization of Nova Scotia at the time of the Swissair disaster, recalls being asked to locate 1,000 body

bags at two o'clock in the morning. The team borrowed supplies from local hospitals and emptied local department stores of plastic tubs and Ziploc bags that would later be used to organize that which would be discovered in the wreckage. Body bags were flown in from Georgia, refrigeration trucks were used for storing body parts, military trucks from the dental unit were transformed into forensic laboratories. There was a need for meeting rooms, office space, phones, transport, accommodations and confidentiality measures. In addition, teams were assembled to support personnel responding to the disaster who were experiencing mass amounts of death and destruction first-hand (Grant, 1999). It became clear in the early stages of this disaster that Nova Scotia did not have immediate access to all of the supplies needed to approach the scale of this relief effort. Fortunately, contributing to the province's capacities, was the strong sense of community support and willingness from local organizations to adapt.

For the Red Cross, one of the many organizations to offer support, the disaster marks a defining moment for the organization. John Byrne, Nova Scotia's Red Cross provincial director at the time of the crash, acknowledged in a 2018 interview that "The Swissair tragedy allowed us to expand and hone our skills, understand the complexities of the event and learn from it" (Canadian Red Cross, 2018). Soon after Swissair flight 111 crashed into the Atlantic ocean, personnel from the Nova Scotia Departments of Health, Community Services and Education, and the Red Cross worked together to establish a joint emergency operations centre in Halifax. The team operating at the provincial headquarters was responsible for supporting both recovery operations as well as families of the victims arriving from all around the world. This type of large-scale collaboration between government and the Red Cross had quite probably not occurred in Nova Scotia before this

tragedy, and it took an event of this magnitude for the groups to recognize some of the gaps that existed in coordination. The experience with this specific disaster eventually led to a formal agreement between the Government of Nova Scotia and the Canadian Red Cross with respect to emergency social services in the event of emergencies and disasters. The agreement was one of the first of its kind in Canada, and has since been adapted, renewed, and used as a model for some other provinces (Canadian Red Cross, 2018).

As previously discussed, one of the many purposes of documenting disaster responses is to reflect on strengths and weaknesses of relief efforts and to identify important lessons that can help to better inform responses in the future. When there is perhaps not a relevant example to draw upon in the region, it can be worthwhile to seek out lessons from other organizations and regions. While the specifics of how officials in Nova Scotia informed their decisions surrounding the Swissair disaster relief effort are not entirely clear, an example of lessons being documented by a relevant outside agency can be found within the work of the National Emergency Training Centre in Maryland. Figure 9 highlights a section from the agency's published monograph from July 1981, offering recommendations for air-disaster response planning. While the publication is roughly 40 years old, it is interesting to note the relevance of the 'lessons learned' within its pages to the crash in 1998. Similar to the case of Swissair, the Maryland report emphasises that communication is one of the major problems that emergency management and disaster relief officials are forced to deal with in the event of a large-scale disaster.

Recommendations for air-disaster response planning:

1) A central command post must be established immediately. The purpose of the central command post is to organize and integrate individuals and local community agencies as they arrive on-the-scene.

2) All rescue workers musts be provided with appropriate identification.

3) A coordinated, interfacing, communications network should be available to all responding emergency service units. Communication benefits will also be enhanced by the presence of a command vehicle on-the-scene that is capable of coordinating and monitoring the use of the network.

4) A portable public address system should be available to on-the-scene rescue workers.

5) If the activated disaster-response plan eliminates overlapping responsibilities, needless repetition of action, and authority disputes, communications will be greatly enhanced.

6) There is also definite need to clarify and discuss (in advance) the responsibilities and role of the media at a disaster site and what the consequences may be of failing to adhere to established standards. In developing these standards, in-depth discussions between emergency service personnel and news directors would be mutually very helpful.

Figure 9 Example of lessons being documented by relevant outside agency, National Emergency Training Centre in Maryland (Grollmes, 1985, pp.10-11).

The relevance of the lessons that had been assembled as guidelines for large-scale air disasters can be seen within the example of the Swissair disaster of 1998. Confusion and lack of coordination can often hinder the efforts of a relief mission, and the importance of clear and focused communication cannot be overstated. An example of this, as well as resourcefulness in the face of lacking personnel and supplies, can be seen in Nova Scotia

when command centres were quickly established, and no time was wasted in coordinating people and supplies to support necessary facilities. In order to foster the level of coordination required for a functioning relief effort, decisions are constantly being made throughout the entire process. In the case of the Swissair disaster, the decision was made early on to politely decline some of the offers from neighbouring provinces to assist in the relief effort. While an event of this magnitude undoubtedly requires a significant amount of resources, the more parties involved requires a more extensive coordination effort. As with any decision, the appropriateness of turning away help can be debated.

Following the disaster, and stemming from discussions on emergency preparedness training that took place during the Atlantic Deputy Ministers' meetings in St. John's, Newfoundland on October 12 and 13, 1999, came the following agreement:

> Nova Scotia identified that while the other Atlantic provinces had offered to provide staff to Nova Scotia during the Swissair disaster the province gratefully declined the offers. In retrospect, Nova Scotia did not recognize that by doing so, it had withdrawn a very valuable training experience from the other Atlantic Provinces. Fortunately, major plane crashes do not occur frequently, but having staff trained to deal with them is certainly advantageous when the time comes. It was agreed that the Atlantic provinces would be prepared to send staff to assist each other during major emergencies and the sending province would accept the costs of transporting their people. The accepting province would assume any operational or logistical support for them while in place (Nova Scotia Emergency Measures Organization, 1999, p.9).

By allowing other regions the opportunity to learn from a neighbouring disaster, there is the potential for future disasters to be handled more efficiently and effectively. While it is understandable for all focus and effort to be placed on mitigating the disaster at hand, and dealing with the debriefing and 'lessons learned' process after the fact, there is something to be said for first-hand experience. One cannot truly appreciate nor understand

the intricacies of responding to disaster until they have been a part of a relief effort. Without proper protocols in place to learn from the lessons coming out of extreme disasters such as the Swissair flight 111 crash in 1998, the same mistakes can be repeated in future similar responses. Similarly, if the experiences of those who were involved in such a response are not documented for the future, knowledge can be expected to leave those relevant organizations along with the staff that moves on. One would hope that officials tasked with responding to this disaster would have engaged in some form of follow-up interview, much like the interviews conducted at the WBG with exiting staff. The collective memories of those involved in this response might be of great significance to the decisions made in the years that followed, especially considering the rarity of air disasters.

In the case of Nova Scotia and the agencies tasked with responding to the Swissair disaster, knowledge and professionalism led to appropriate measures being taken with respect to the recovery stage of the relief effort. Important lessons were identified, and more importantly, passed on to those who could benefit from the experience. An example of this knowledge sharing can be seen within the tragic example of the September 11th terrorist attacks in New York City in 2001. Dr. James Young, Ontario's chief coroner who was called to help in Nova Scotia at the time of the Swissair disaster, recounted two important lessons from his experience with the crash: 1) that there is a need to accurately inform families, and 2) be willing to work with families (Silversides, 2001). These lessons serve not only humanitarian purposes, but also as a means of collecting the "highest quality antemortem information for identifying bodies and body parts" (Silversides, 2001, p.1243). John Butt, Nova Scotia's medical examiner at the time of the crash also identified an important lesson from the Swissair disaster: "establish a protocol for dealing with human

remains– the extent and type of DNA testing that will be conducted and what will be done with the remains– and then publicize it" (Silversides, 2001, p.1243).

The attacks on the World Trade Center presented one of the greatest challenges for forensic medicine in history, with many of the roughly 6000 victims experiencing both the burning and collapse of the building. Much like the victims of the Swissair crash, bodies had to be identified through DNA analysis, dental records, fingerprints and antemortem radiographs (Silversides, 2001). In moving forward with the relief effort in New York City, Butt acknowledged, "There will be people who will want [officials] to go all the way and test every bit of remains. You have to be clear about your intentions, do it wisely and then stick to your guns" (Silversides, 2001, p.1243). To make matters worse, unlike with a plane crash, victims of the September 11th terrorist attack were not listed on a manifest and much of the company records were destroyed. Officials in New York made the decision to issue death certificates before positive identifications of victims, streamlining the process for families to seek life insurance and death benefits. John Butt acknowledged that the decision coming out of New York might set a new precedent for future disasters causing mass casualties, further demonstrating how lessons and experiences can be carried forward (Silversides, 2001).

4.2 Hurricane Juan (2003)

On September 29th, 2003, Hurricane Juan ripped through Nova Scotia, bringing down trees and powerlines, damaging homes, and claiming the lives of eight individuals. The Category 2 storm was recorded as the most destructive hurricane in Halifax's modern history, wiping out power for hundreds of thousands of people as it passed through the

Maritime provinces of Nova Scotia and Prince Edward Island (Bowyer, 2003). Nova Scotia's Emergency Management Office had issued a general hurricane advisory earlier in the month of September, warning the province that this time of year brings a heightened risk of hurricanes. On September 25, four days prior to landfall, the Canadian Hurricane Centre provided Nova Scotians a more detailed summary of what they might expect in terms of seriousness and severity. EMO encouraged citizens to continue monitoring weather advisories, locate safety shelters in their homes, and prepare an emergency kit. It was also recommended that people do their best to reduce potential hazards on their properties by trimming branches and removing dead trees. Due to the increased vulnerabilities associated with those living on the coast, some regions were encouraged to take extra precaution by boarding up windows or even finding alternative places to stay. On the day before the Category 2 Hurricane struck, EMO sent out another news release reinforcing its earlier statements. By the time Juan made its impact on the region, emergency officials from all levels of government had gathered at EMO headquarters along with officials from related agencies and organizations, similar to the setup that was found within the Swissair disaster response. Prepared to work alongside one another for the days and weeks following the hurricane, the group made up the Joint Emergency Operations Centre (EOC) (Government of Nova Scotia, 2003). Members ended up working together to contribute to what would later be remembered as "the greatest emergency response effort in Nova Scotia since the Halifax Explosion of 1917", with an estimated $200 million in damage (Government of Nova Scotia, 2003, p.2; Fogarty, 2003).

One month after the hurricane, the joint EOC team met up again to discuss the response effort, more specifically to debrief on the breadth, scope, strengths and

weaknesses of the response, and to identify any lessons learned. As outlined in the 2003 Emergency Measures Organization debriefing for Hurricane Juan, the Emergency Activation Team originally consisted of staff from EMO, the office of Critical Infrastructure and Emergency Preparedness, the Provincial Departments (Community Services, Health, Environment and Labour, Education, Natural Resources, Transportation and Public Works and Intergovernmental Affairs), the RCMP, Red Cross, Aliant, and the Power Corporation.

A representative from Canada's Department of National Defence (DND) highlighted that, from their perspective, neither HRM nor NSPI was initially prepared to take full advantage of the soldiers and sailors that had been provided through the department in response to a request from the two organizations. Teams from DND were called upon to assist with restoring local power grids (beginning with essential services) as well as facilitating the reopening of traffic lanes in the Halifax municipality, however it was noted that the teams were left without direction and guidance during the early stages of the storm (Government of Nova Scotia, 2003). Although the support from DND contributed to the potential capacities of the province, it found itself in the position of having 1,133 people ready to help but unsure as to how. Fortunately, the issue was quickly resolved following a meeting between DND, HRM and NSPI shortly after Hurricane Juan struck the area, and personnel from DND were dispatched alongside teams from HRM and NSPI. Through this example it can be seen how issues need not be reserved until the 'debrief' following a disaster, but often times can be identified and quickly addressed as the response progresses. The ability to reflect upon the appropriateness of decisions as they are being made can help to avoid the pursuit of a 'bad idea', or to simply redirect the

response into a better direction. In DND's final note on the response to Hurricane Juan, it was stated that the recovery effort could have been improved by a heightened situational awareness, requiring a better system of communication with EMO staff (Government of Nova Scotia, 2003).

Echoing some of the issues with communication felt by other groups, Ken Kirkwood, manager of the Maritimes Weather Centre at the time of Hurricane Juan, spoke at the Standing Committee on Economic Development in January 2004. On behalf of the centre, some lessons that were brought to light through the experience of the storm were brought forward for discussion. The main gap in the contingency plan that was utilized by the Maritime Weather Centre during the hurricane was surrounding co-operation with first responders (Emergency Measures Organization & Environment Canada, 2004). While relationships with EMO remained strong throughout the response, Kirkwood explained that the province would benefit from joint messaging regarding warnings and preparedness (the same process used with the Department of Health surrounding air quality) (Emergency Measures Organization & Environment Canada, 2004). A plan that involves both parties makes sense moving forward, as the Maritime Weather Centre are experts on the meteorological side of weather warnings, however it is EMO that is the expert on what exactly people should do in response to that weather warning. In relation to this, the Weather Centre maintains a close relationship with the media. With the support of EMO, it could release a weather warning at the same time as preparedness messages, and in doing so, streamline the process of getting information to the public (Emergency Measures Organization & Environment Canada, 2004).

With further respect to communication, a reoccurring topic of discussion following Juan, the need for a broadened communication of first responders was expressed (Emergency Measures Organization & Environment Canada, 2004). When considering the knowledge and capacities that exist within a particular organization, it is important to remember that different groups, having had different experiences and training, will surely hold different views. In the event of an emergency, the coordination of these differing ideas can be challenging, however if done effectively, a more efficient and impactful response might be possible. While a clear, established and tested chain of command is essential to a functional response (as can be seen in the example of Hurricane Juan), there might be room for more contact between agencies such as local fire departments, '911' staff and the Maritime Weather Centre. Relationships between organizations as well as the teams operating within become clearer in the event of an emergency, and through communication, training and understanding, these partnerships have the opportunity to become even stronger.

After hearing from the agencies and organizations involved in the response to Hurricane Juan, and with a goal of improving Nova Scotia's overall emergency response capabilities, dozens of recommendations were made for improving future relief efforts. Figure 10 provides a brief summary of such recommendations.

Summary of major recommendations:

1) *Improved Use of Resources and People:*
    a. Emergency training opportunities should be more widely available to responders in various fields, including operations and communications.
    b. Emergency crisis simulations should be used to prepare emergency personnel for the "real thing." This was suggested with particular reference

to the three agencies with primary responsibilities for health care in Nova Scotia–the provincial Department of Health, Public Health Services, and Emergency Health Services.

c. Identify, list, and continuously update contact and resource/asset lists for deployment in an emergency. Resources that should be identified include generators and emergency vehicles. Emergency personnel lists should include additional human resources, including department of justice sheriffs who have emergency vehicles, first aid training, and experience in transporting people.
d. Trained backup personnel should be available to relieve first-line responders in an extended emergency. At least two presented said staff members were basically burned out in the first week of emergency response effort.

2) Improved Operational Protocols:

a. Improve "situational awareness" practices inside Nova Scotia's Joint Emergency Operations Centre. The EOC should be equipped to better understand where the crisis points are, what has been accomplished in the field, and where resources should next be assignment on a priority basis.
b. Establish written protocols for liaison between the Joint EOC and the HRM EOC. While it was agreed that communications worked well between the two operations centres, this was a function of the experience of, and relationships between, the people involved. Written policies and protocols are required to guide the operational response no matter who is leading it.
c. Backup or contingency operations centres should be identified for key groups, departments, and agencies, in case primary sites are inoperable in an emergency.
d. The Emergency Operations Centre itself should be well enough equipped and spacious enough to accommodate the extra people–including communications workers–who are deployed in a major emergency. Particular mention was made of remote access to computed data and systems.

3) Improved Communications:

a. Further develop relationships between agencies involved in emergency response. This will encourage information sharing during emergencies. It will also help establish a communications network with up-to-date contact lists.
b. NSPI and other agencies directly involved in emergency response operations should design automated telephone answering systems to

provide callers with estimated hold times. That way, callers would be able "to get on with their lives"–as one participant said–when wait times are excessive.

c. Develop good working relationships between Communications Nova Scotia and media organizations to facilitate communications during an emergency.
d. Continue to prepare general emergency information and safety tips so that it is readily available and user-friendly. It was noted that some existing brochures are long and difficult to read. This could be simplified and prepared as fact sheets for ready use in an emergency.
e. Joint public messaging should be further developed and delivered through a streamlines system that efficiently provides consistent, up-to-date information to the public while leaving 911 open as a true emergency line.

Figure 10 Summary of major recommendations, quoting directly from the Report on the Emergency Response to Hurricane Juan (Government of Nova Scotia, 2003, pp.9-11).

Following Hurricane Juan there was an increase in demand for emergency preparedness training not only in the public sector, but the private sector as well. The spike in interest led EMO to consider their delivery of training services, add additional courses, as well as introduce higher level courses for emergency management in an effort to increase the capacities of the region. The events of 2003 in Nova Scotia led to numerous changes in the way training is delivered in the province, and the frequency at which it is offered (Government of Nova Scotia, 2003). Addressing such issues can help lead to increased resilience within the province, as well as capacity building not only within emergency management organizations, but the homes of Nova Scotians.

Taking into account the amount of published resources detailing the response that followed Hurricane Juan, it is clear that Nova Scotia took seriously the practice of accurately recounting the events, acknowledging gaps in planning, and recommending ways of addressing those gaps. This is impressive when considering the research of

Wiewiora and Murphy that highlights the most commonly cited reason for poor 'lessons learned' capture being the lack of time dedicated to the activity (2015). Similarities can be drawn between the WBG and NS EMO when examining their follow-up activities. While the two organizations most certainly differ in size, both groups provide detailed reports of their activities that include statements from those involved, evaluations, and 'lessons learned' from the experience. The 2003 hurricane serves as an important example in Nova Scotia's history of learning through experience with disaster. Hurricane Juan proved important not only with respect to the lessons that were learned, but also in the way that lessons can be extracted and learned through meaningful processes in the recovery stage of disaster.

4.3 H1N1 Virus (2009)

H1N1 influenza was first reported in April 2009 in Veracruz, Mexico. It quickly spread around the globe, eventually reaching Nova Scotia, Canada. On June 11, 2009, the World Health Organization officially declared H1N1 to be a pandemic (Government of Nova Scotia, 2010). While there were 1,334 lab-confirmed cases of H1N1 in Nova Scotia between April 2009 and January 2010, the province suspects the number of people infected to have been much higher, as only the most serious cases were tested for lab-confirmation. Over the course of 10 months the disease resulted in 291 hospitalizations (50 in intensive care units), and seven deaths in Nova Scotia (Government of Nova Scotia, 2010). When considering some of the vulnerabilities that exist in Nova Scotia, an aging population and the associated impact that can have on medical resources, should be factored into planning and response. Throughout the pandemic, several organizations worked together towards

the goal of keeping Nova Scotians safe. Collaboration took place within the health system and government, as well as among all levels of government. The Department of Health Promotion and Protection and the Department of Health worked alongside the Public Health Agency of Canada to spearhead Nova Scotia's response to the virus. Many other organizations such as the departments of Community Services, Justice, Labour and Workforce Development, and Education, as well as the Public Service Commission and Emergency Management Office were also involved in the effort (Government of Nova Scotia, 2010).

In response to the first wave of the H1N1 outbreak in 2009, the Office of the Auditor General of Nova Scotia released a Special Report on Pandemic Preparedness. Through a review of the Health System Pandemic Plan, the report offered several recommendations for moving forward, mainly focusing on the province's overall leadership structure, access to stockpiled supplies, and the need for a central government agency to ensure that key stakeholders (including non-government organizations) have suitable, pandemic-specific, emergency plans (Office of the Auditor General, 2009). This approach is similar to that of the IFRC with respect to the 2009 Migration Policy, wherein overarching goals and guidelines were established, yet individual Societies were left to develop plans that fit their unique situations. By allowing individual groups and organizations the opportunity to take stock of their own capacities and vulnerabilities, a more suitable plan might be possible. Unfortunately, the same issue remains as it did with the IFRC, that some groups will not prioritise such activities. It is unclear how many government and non-government organizations developed their own pandemic-specific emergency plans following this recommendation.

Perhaps of greatest importance, the Auditor General's report stressed the need for a leadership structure to be agreed upon and put in place in order to provide a coordinated response to pandemic situations. Nova Scotia's Emergency Management Office was identified as possessing legal authority to assume the role of organizing this response, however the specifics as to who would be involved in making those related decisions was less clear. At the time this report was published (2009), there was no formalized structure addressing the joint response of the Department of Health, the Department of Health Promotion and Protection, and the Emergency Management Office. The Auditor General's Report suggested that the government of Nova Scotia decide who will assume the leadership position if a pandemic situation were to occur again (or if H1N1 continued), as this lack of defined leadership had been a significant gap identified following the 2003 SARS outbreak in Toronto (Office of the Auditor General, 2009).

Another main concern coming out of the 2009 report was the lack of central agency responsible for pandemic planning (Office of the Auditor General, 2009). While a pandemic emergency, and the planning that comes along with that, might seem like a health system issue, there are several aspects that should be addressed by non-health related authorities. In order for the province to engage in a successful response to a health-related emergency, all government departments and agencies involved should have detailed and complete plans already in place that take into account both the capacities and vulnerabilities associated with their role. In Nova Scotia, it is the responsibility of EMO to then review these plans and ensure they are both complete and adequate. While many departments and agencies had not submitted a plan to EMO prior to the H1N1 outbreak, the report highlighted that, "EMO, with its expertise in emergency planning, is the logical

agency to ensure both government and non-government entities have plans to deal with an emergency, including a pandemic. Adequate emergency plans are necessary to ensure critical services such as power, water, snow clearing, policing and fire response continue during a time when absenteeism could be high" (Office of the Auditor General, 2009, p.11). In response to the report, NS EMO released a statement (Figure 11), that details two initiatives that were undertaken by its staff.

Statement from NS EMO:

The role of the Emergency Management Office (EMO) is to ensure the safety and security of Nova Scotians, their property and environment by providing for a prompt and coordinated response to an emergency. This small team of highly skilled personnel takes its responsibility seriously. Our organization is committed to continual improvement and welcomes the opportunity to receive and comment on the Auditor General's report.

This report highlights the importance of proper planning and collaboration with key partners to ensure the best possible outcomes when faced with an emergency situation.

The Nova Scotian Government takes an "all-hazards approach" to emergency management. This allows us to be better prepared for events ranging from significant weather, a large-scale industrial accident, or global public health issues like a pandemic. This approach is core to maintaining public safety and to ensuring that critically important government programs and services are available to Nova Scotians.

Since the Auditor General completed its audit, EMO Nova Scotia has led two initiatives that directly relate to recommendations in this report:

1) EMO has worked with senior government leaders to establish an Incident Management Team that will provide corporate executive leadership on the H1N1 Flu Virus and other emergencies.

2) EMO has requested data from all government departments about their critical services, programs and functions. Once collated by EMO's business continuity management team, this information will help inform government decisions during a pandemic event. Emergency management professionals acknowledge that no emergency plan is perfect. Only by testing and incorporating learnings from real events, exercised emergency scenarios and reviewing global best practices can an organization (or group of organizations) truly be prepared for the next emergency event.

Figure 11 NS EMO's response to the 2009 Auditor General's Special Report of Pandemic Preparedness (Office of the Auditor General, 2009, p.47).

The response to H1N1 in Nova Scotia was based on existing plans for pandemics, experience gathered throughout the first wave of H1N1, as well as the findings of the 2009 Auditor General's Special Report of Pandemic Preparedness. In general, Nova Scotia considers its response to the H1N1 experience as effective, however acknowledges that areas for improvement can always be identified through any experience with emergencies. The Department of Health Promotion and Protection, the Department of Health, the nine district health authorities, and the IWK Health Centre underwent an extensive debriefing process with a goal of updating and developing operational plans for future emergencies impacting the health care system. In 2018, the Canadian Pandemic Influenza Preparedness Plan was updated to offer guidance for the health sector in the event of an emergency. In the chapter titled, "Lessons Learned from the 2009 Pandemic," the report draws on the experience of the H1N1 outbreak in Nova Scotia, and applies lessons from that experience to potential future scenarios.

It was observed that while there was significant variation in the timing and intensity of the spread of H1N1, greater impact was seen in Indigenous populations of Canada (Pan-

Canadian Public Health Network, 2018). While this issue certainly warrants far greater attention than a paragraph in a thesis, it serves as an important example of how deep-rooted some of the problems that come up through examining a response can be. Centuries of systematic oppression and the disastrous health effects that come as a result cannot be solved by a bullet point on a list of 'lessons learned', however perhaps it can serve as a place to start. As can be seen in the work being done by the IFRC, addressing vulnerabilities that exist within marginalized communities is essential to strengthening a region as a whole. Action towards the creation of meaningful policies or adaptation of insufficient plans already in place should be propelled by the lessons coming out of experiences with disasters– keeping in mind that different group experience disasters differently. In the case of H1N1, there are countless examples of what went 'right' throughout the relief effort, such as planning processes, relationship-building and collaboration. While acknowledging positive aspects of a disaster response is important in ensuring that good practices continue, recommendations for improving preparedness and response require urgent consideration.

In concluding the report on Canadian Pandemic Influenza Preparedness, authors encourage decision makers not only to identify lessons learned through their experiences with disasters, but also to consider how well their response met the goals and objectives of their plans (in this case, pandemic preparedness and response) (Pan-Canadian Public Health Network, 2018). Continuously evaluating the plans and procedures in place within an emergency management setting is critical, and valuable examples of this being done can be seen in the example of the World Bank Group. Overtime, perhaps a well-intentioned and suitable plan is no longer appropriate due to a changing environment. The evaluation of a disaster response allows lessons learned from real life events to be generated and

documented in order to inform future plans and plan revisions. The Pan-Canadian Public Health Network recommends not only administering this recovery process at an internal level, but also at a higher level of formal evaluation including federal, provincial and territorial partners considering a multitude of aspects to a pandemic response. A united and comprehensive approach to pandemic evaluation across all parties involved should be the goal, so that best practices can be uncovered (Pan-Canadian Public Health Network, 2018). It will be interesting (as will be briefly discussed in the following section) to examine the extent to which lessons from the H1N1 virus can be seen in the response to the current COVID-19 pandemic.

4.4 Some Lessons Learned

Building off the few brief 'lessons' and recommendations found within these case studies, some potential lessons that connect the Swissair crash, Hurricane Juan and the H1N1 pandemic might include:

1) *The importance of establishing a clear 'chain-of-command' and/or command centre:* A clear 'chain-of-command' should be established as early as possible following a disaster. Ideally, this should already be included in the existing preparedness plans so that relief efforts can begin as quickly as possible. The roles and responsibilities of each team within this 'chain' should be clearly established and relayed to everyone involved. We can see how beneficial it was to establish a command centre in the early stages of response when analysing the Swissair example. Of course, there was no warning that a plane crash was going to take place, but by having one member of every team in the same room, important discussions could be had without scrambling for telephone

numbers, and key information could be quickly relayed to the teams involved. This type of structure should not be used as a means of excluding other insights (particularly from the local community), but rather help to establish an organized response that is set up to receive such support.

2) *The need for effective communication*: The level and quality of communication amongst team members, within groups of teams and with the public can significantly alter the overall experience of a disaster response. In the case of Hurricane Juan, NS EMO did well to warn Nova Scotians of the impending storm, so that residents could do their part to secure their homes and stock up on supplies. While appropriate steps seem to have been taken with respect to informing the public, communication within and amongst teams needed to be improved (as was discussed in several 'debrief' sessions). The role of the media should also not be overlooked throughout such discussions.

3) *'Lessons learned' need not be reserved until the 'debrief' session:* Monitoring, evaluating and adapting should not be left exclusively until the follow-up stage(s) to a disaster. Goals and objectives of the initial response plan should be quickly established, and if through monitoring/evaluating (even informally) it becomes clear that they are not being met, adaptations can and should be made. An example of this can be seen within the discussion of Hurricane Juan, when members of the DND team were not contributing to the relief effort as effectively as planned. When this was recognised, discussions between the relevant teams were had and adaptations to their responsibilities were made. Similar recommendations were made in the 2009 Auditor General's report following the first wave of the H1N1 virus. Lessons learned from the

first wave were used to inform responses to the second wave. One would hope that this will also be the case with the COVID-19 virus (now facing a second wave in Nova Scotia).

4) *Significance of documenting experiences with disasters:* Specific experiences with a disaster should be sought from the multiple perspectives involved. Through the sharing and documenting of experiences, lessons can be identified and later applied. While the World Bank offers an impressive set of documentation and preservation techniques, one can also look to NS EMO for an example of an organization committed to implementing post-disaster activities and documentation strategies. The sheer volume of material related to Hurricane Juan that is available to the public (with likely even more available to staff), demonstrates the lengthy process of debriefing and learning that took place following the 2003 storm. In successfully documenting meetings, discussions and analyses of the response, potential lessons that might not have been evident at the time have the opportunity to be 'learned' at a later date. Those involved in the H1N1 pandemic were able to make informed decisions regarding their response to the second wave of the virus, as the first wave was followed by a thorough analysis of the experience. The significance of documenting experiences with disasters not only relates to an individual organization's desire to improve, but also to other relevant organisations that might be able to learn from other insights. For example, in the case of the Swissair crash, important lessons stemming from the tragedy were later applied to those tasked with responding to the 9/11 attacks in New York.

5) *Importance of responding to disasters whilst considering the local context:* While the case studies explored in this chapter all took place within Nova Scotia and were

responded to by Nova Scotia-based teams, the importance of the local context remains significant throughout the relief effort as well as any follow-up activities. When Swissair flight 111 crashed off the coast of Peggy's Cove, there had obviously been no warning. Without adequate supplies to support the recovery effort, teams had to adapt and consider the resources that were available in the region. Fishermen took to the waters in search of survivors, military trucks from the dental unit were transformed into forensic laboratories, and local hospitals and department stores were scoured for additional supplies. Looking beyond the necessity of adapting to the surrounding environment and 'making-do' with what is available, it is essential to consider how different groups might be impacted differently by disasters. When examining the case of the H1N1 pandemic it must be asked, "why were Indigenous communities 'hit harder' than others?" Disasters can often stem from deep-rooted inequalities, and such inequalities can be perpetuated when disaster relief efforts prioritize the enforcement of the pre-disaster social order over meeting the needs of victims. When it comes to the distribution of resources, or the areas that receive priority, it is essential to consider why certain decisions are being made. This type of evaluation appears to be lacking within post-disaster activities in Nova Scotia. As a province deeply rooted in systemic racism, such issues must be made priorities in moving forward with disaster management.

While it is certainly useful to draw on relevant experiences within the region in question, as was the case in the Swissair crash, there might not be a history of similar disasters in that region. It can often be helpful to expand the scope of analysis and look to other regions that have faced similar challenges. While it remains essential to

consider the local context, valuable lessons can and should be sought from other areas as well.

4.4.1 The COVID-19 Pandemic

When considering some of the lessons learned through experiences with disasters in Nova Scotia, one must also question how they might be applied to the current COVID-19 pandemic. Although COVID-19 had not yet begun to sweep across the globe until the final stages of researching and writing this thesis, the central motivation for exploring this topic was to better under how past experiences with disasters help to inform future disaster relief efforts. Narrowing the focus onto Nova Scotia in particular, capacities to acknowledge in response to the pandemic might include: population density (in more rural regions), a local Red Cross branch operating in several regions across the province, presence of strong cultural and religious groups, and sharing a border with only one neighbouring province. Some vulnerabilities might include: an aging population, population density (in the city of Halifax), the capital city being a 'university city' (with several campuses in a small area), and Halifax having the main connecting airport in the Maritime provinces.

This list is of course quite general, and the different institutions involved in coordinating the response effort would benefit from completing such an exercise with a more focused lens. Health departments from both the provincial and federal levels would have their own valuable perspectives to include, as well as other departments such as Community Services, Justice, Labour, Education, and of course, the Emergency Management Office. When considering the massive coordination effort that is required for

such an unprecedented emergency, it is interesting to consider how each of these institutions approach concepts such as institutional memory, capacity building, 'lessons learned' approaches, and evaluations, and how differing approaches interact with one another. In the recovery stage of Hurricane Juan, it was suggested that the province would benefit from joint messaging regarding warning and preparedness. In that case, it was recommended that the Maritime Weather Centre and NS EMO coordinate their public statements in order to streamline the process of getting information to the public. With Nova Scotia's response to COVID-19, a similar approach can be seen when looking at the weekly (and sometimes daily) press conferences with the Premier of the province, Stephen McNeil, and the Chief Medical Officer of Health, Dr. Robert Strang.

In cases like this, the significance of an established chain-of-command and consistently clear communication cannot be overstated.

While a pandemic emergency might seem like a health system issue, there are several aspects that should be addressed by non-health related authorities. In order for the province as a whole to engage in a successful response to a health-related emergency, all levels and departments of government, as well as related non-government offices, should have detailed and complete plans in place that take into consideration both the capacities and vulnerabilities associated with their distinct role. In response to the first wave of the H1N1 outbreak in 2009, the Office of the Auditor General of Nova Scotia stressed the importance of pandemic-specific emergency plans. Because the COVID-19 response is still ongoing, little has been published with respect to levels of preparedness and response. It will be interesting to note the organizations that took this recommendation seriously, not

for accountability purposes, but in order to ensure that everyone has a pandemic-specific emergency plan in place in the event of another pandemic.

Compared to the rest of Canada (and North America more generally), the "Atlantic bubble," consisting of Nova Scotia, Prince Edward Island, New Brunswick and Newfoundland, has fared relatively well (keeping in mind that the pandemic is not yet over). While Nova Scotia will surely be looking for 'lessons learned' from the COVID-19 pandemic and ways to improve future response efforts, it is very possible that other regions will be looking to the east coast of Canada for their own 'lessons'.

CHAPTER 5: CONCLUSION

5.1 Summary Of Main Points

'Lessons learned' approaches to disaster relief have four main functions: to gather experiences, analyse them, disseminate the lessons, and finally, to implement changes to modify behaviour (Granatosky, 2002). Such approaches, however, do come with their own sets of challenges. When considering how organizations can gather and analyse experiences responding to disasters, Nova Scotia's Emergency Management Office serves as a useful case study. Experiences responding to the Swissair flight 111 crash, Hurricane Juan, and the H1N1 pandemic, highlight how the NS EMO consistently prioritizes debriefing sessions with all groups involved, discussions of 'what went right' and 'what went wrong', and the identifying of lessons that can be carried forward. While the organization does appear to be committed to the gathering and analysis of experiences, it is also worth recognizing *whose* experiences are actually being heard. In addition to the experiences of those involved in responding to the disaster, perspectives from the community in question should also be sought and valued. Additionally, the ways in which a disaster might have impacted different members of society (depending on race, gender, age, etc.) must also be included throughout this analysis. Anderson and Woodrow's Capacities and Vulnerabilities Analysis is a useful framework to consider when working to understand the unique physical/material, social/organizational, and motivational/attitudinal factors of a region, as well as how perceptions of capacities and vulnerabilities might differ depending on who is asked to identify them.

The World Bank Group in particular serves as an important example of a 'learning organization' that has managed to operationalize aspects of the 'lessons learned' approach

through its sophisticated archival systems and dedication to capturing experiences. It is rare to find an organization that incorporates institutional memory with lessons learned through debriefing sessions (Levy, 2018). The WBG Archives and Oral History Program are just two examples of how the Bank has managed to implement systems that work to build and preserve its institutional memory. When considering though, that one of the main challenges associated with 'lessons learned' approaches is that lessons are not always translated into changes to current practices, the capture and preservation of lessons is simply not enough (Levy, 2018). Essential to this point, is that 'lessons learned' should sometimes be viewed more so as experiences that need to be explored, and questions that need to be asked.

Reoccurring challenges or 'lessons learned' identified through experiences with disasters, should not have to be continuously 'learned again'. Rather, common challenges should be treated as points to focus on *now* in the planning, testing, measuring, and implementing of changes (Savoia et al., 2012). Examples from within the International Federation of Red Cross and Red Crescent Societies provide useful insights into one of the main challenges associated with this approach to disaster relief: implementing changes to modify behaviour. It can often be challenging to draw specific connections between 'lessons' and possible solutions, therefore it is important that organizations commit to fostering an information system (or systems) that compile context-specific recommendations for changes to current practices (Savoia et al., 2012). The IFRC's experience with implementing, evaluating and modifying strategies surrounding gender equality and support for migrants suggest that the organization is committed to just that.

Case studies focusing on specific examples from within the IFRC, WBG and NS EMO suggest that these organizations hold important insights and experiences on learning lessons through experiences with disasters. The knowledge and perspectives held within and between members of an organization will shape the way in which challenges are approached, options are presented, and ultimately, resulting decisions. The value that is placed on institutional memory, capacity building and positioning oneself as a 'learning organization', will be determining factors in whether or not relief efforts will contribute to increasing the capacities and reducing the vulnerabilities of regions facing disasters of any kind.

5.2 Limitations Of Research And Suggestions For The Future

Case studies meant to highlight some of the lessons that can be learned through experiences with disaster were focused specifically on Nova Scotia, Canada. It is important to consider the context in which a disaster takes place (e.g., social and political structure, financial resources, environment etc.) as these factors can play a significant role in determining how disaster relief efforts are organized, implemented, and ultimately, how effective they might prove to be. Also, without exclusive access to some of the organizations' internal or confidential records, the information informing the thoughts and perspectives featured throughout this research were largely based on documents and publications that had been made available to the public. When considering that most organizations would like to represent themselves in a positive light, it is important to look at the information that is shared with a critical lens. Individuals experience disasters differently, and as a result, relief efforts will impact people differently as well. Without an

all-encompassing, thorough analysis of an entire population's experience with a relief effort or development project, one cannot assume that there was a shared experience across the region. Without this information available, it is difficult to determine what other 'gaps' in preparedness and response might exist.

Future research on topics related to disaster relief and development and that which informs it is encouraged. A clearer understanding of the benefits (and associated challenges) of building a strong institutional memory paired with well-suited frameworks and knowledge management techniques, might contribute to more meaningful disaster relief and development efforts overall. As mentioned in the limitations of this research, much of the information informing this discussion was accessed through publicly available documents and that which the relevant institutions chose to share outside of their own walls. If possible, future research would benefit from further access to documents and information that has not been made available for public access. The lessons and memories that have been kept in dusty boxes in the basements of institutions can hold interesting and candid insights.

The unique characteristics (cultural, spiritual, economic, geographic, etc.) of the region(s) being explored in this type of future research could also be considered in more detail. For example, when exploring Nova Scotia's experiences with disasters, factors such as the aging population should be more carefully considered when evaluating decisions related to planning and response. As this demographic continues to grow and essential support systems and resources are impacted, some changes to existing structures might be warranted. Undoubtedly, the effects of climate change and rising sea levels on a coastal province such as Nova Scotia must also be carefully addressed. Those tasked with

preparing for disasters in the region might ask, *'What types of challenges are anticipated in the future, and how can they be accounted for within the framework of a Strategic Plan?'.* Additionally, as communities and countries begin to recover from the COVID-19 pandemic, research focusing on this unprecedented disaster is most certainly warranted (and expected). There will be countless case studies worthy of exploration, and lessons should be extracted from both the 'successes' and 'failures' of different regions. The most recent pandemic has made clear how quickly disaster can strike, and how enormously impactful they can be. Research focused on how lessons learned from COVID-19 can begin making their way into all stages of the disaster management cycle should be a priority.

Perhaps most importantly, future research in this area should direct more focus onto how local and international development and relief organizations are taking into consideration the distinct experiences of women, children, black, indigenous, and other marginalized and vulnerable members of society. *Are their needs being met? Are the lessons being learned from experience applicable to all groups involved? What types of changes might need to be made to existing policies and procedures to ensure that everyone has the opportunity to recover from disaster?* The impacts of disasters continue to disproportionately affect women and children (Cutter, 2017). Furthermore, marginalized members of society will typically be more vulnerable to disasters and might not receive the support needed to recover (Culligan & MacPhee, 2019). Such issues must be carefully considered if organizations intend on accomplishing one of the overarching goals of disaster relief and development: to reduce vulnerabilities and increase capacities for *all*.

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