Civil-Military Coordination in Responding to Nature-Triggered Disasters: Understanding the Challenges and Opportunities of the Canadian Emergency Response Structure

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Abstract

This study explores the challenges and opportunities associated with engaging the military in domestic nature-triggered disasters within Canada's evolving federal and provincial emergency management framework. As climate change intensifies the scale and frequency of emergencies, the Canadian Armed Forces (CAF) has become increasingly involved in domestic responses—despite operating within a governance structure that prioritizes provincial autonomy and civilian-led coordination. Using a qualitative case study approach, this research draws on inputs from 26 Key Informant interviews, a multi-stakeholder focus group session, and a comprehensive literature review to examine how institutional structures, interagency coordination, and stakeholder perspectives influence military involvement in disaster scenarios.

The findings reveal that, although the CAF offers critical operational capabilities—such as logistics and rapid air deployment—its integration into domestic response systems remains are challenged by procedural ambiguity, organizational culture gaps, and varying levels of operational and institutional preparedness across civilian agencies, particularly in areas of training, equipment, and interagency coordination readiness. The research identifies strategic risks in Canada's overall disaster response capacity, including unsustainable reliance on military support, delays in mobilization, and insufficient investment in local disaster infrastructure. Through comparative analysis with selected countries, namely the United States (US) and New Zealand, the study highlights how clear mandates, joint training, and intermediate response bodies can improve coordination and efficiency. The thesis calls for a nationally coherent framework that clarifies the CAF's support role, strengthens civilian capacity, and ensures balanced disaster governance in Canada.

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Dedication

This thesis is dedicated to my parents, whose love, sacrifices, and unwavering belief in my potential have been my constant source of strength. It is also dedicated to my spouse and loved ones, whose patience and encouragement have sustained me through every challenge.

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Acronyms

CAF	Canadian Armed Forces
CBSA	Canada Border Services Agency
CDEM	Civil Defence Emergency Management (New Zealand)
CSIS	Canadian Security Intelligence Service
DACC	Defence Assistance to the Civil Community (Australia)
DND	Department of National Defence
DRR	Disaster Risk Reduction
DSCA	Defense Support of Civil Authorities (United Sates)
EOC	Emergency Operations Centre
EM	Emergency Management
EMO	Emergency Measures Organization
FEMA	Federal Emergency Management Agency
FGD	Focus Group Discussion
MEMO	Manitoba Emergency Management Organization
NGO	Non-Governmental Organization
NRF	National Response Framework (USA)
REB	Research Ethics Board
UNDRR	United Nations Office for Disaster Risk Reduction
US	United States
RCMP	Royal Canadian Mounted Police
RFA	Request for Assistance
FGD	Focus Group Discussion
KII	Key Informant Interview

Chapter 1: Introduction

1.1. Introduction

Over the past two decades, disaster management in Canada has been confronted serious challenges with the increasing impacts of climate change.[1] Floods, wildfires, and ice storms are happening more often and with greater intensity and complexity.[2] These events do not just damage infrastructure or threaten public safety—they also challenge Canada's emergency management systems at the federal, provincial, and municipal levels beyond their limits. As the country faces mounting climate risks, effective disaster management is required, necessitating strong interagency collaboration, clearly defined institutional roles, and resilient, cross-sector partnerships. In this evolving environment, the Canadian Armed Forces (CAF)—primarily initially for defence of the state at home and abroad—has become an increasingly visible part of domestic disaster response.[3,4]

Traditionally, the military was only called in as a last resort when local and provincial resources were overwhelmed.[5] This approach protected civilian authority and discouraged unnecessary expensive military spending. However, in recent years, the CAF is being asked to do much more, far more often—from evacuations and logistics, to firefighting and rebuilding critical infrastructure.[5] As this reliance on the military grows, there is less pressure on already-strained civilian institutions to adapt and to handle longer and more complex emergencies. As Ratchev and Tagarev[6] note, when civilian preparedness systems are underdeveloped, overuse of military resources can unintentionally reinforce dependency and distract from necessary investment in civilian capacity. This shift has raised serious questions about the clarity of mandates, operational sustainability, and finding the right balance between civilian and military roles in disaster response.[6,7]

While the CAF brings crucial strengths to aid in disaster responses —such as logistical expertise and airlift capacity—it is often involved in civilian emergencies in an improvised and inconsistent manner.[8] Experts identify gaps in how agencies collaborate, confusion regarding the process for requesting military assistance , and differing support expectations between military and civilian partners.[9] These disconnects can lead to delays, miscommunications, duplicated efforts, and uncertainty over who is in charge—all of which can seriously weaken disaster response and erode public trust.[10] As it is likely that the CAF will remain a key actor in future disaster

operations, both the Government of Canada and provinces are calling for a strategic overhaul of how civilian and military systems work together.[3–5] This research examines these issues, aiming to offer grounded, real-world insights into building a more coordinated, resilient emergency response system.

The growing role of the military is also a concern for Canada's approaches to disaster coordination. Without a strong, proactive structure for civil-military coordination, the country risks falling into a cycle where military assistance merely occludes weaknesses in local and provincial systems, rather than addressing and fixing them. It is argued that, over time, this could strain military resources dangerously thin and hinder the development of robust civilian emergency capacities.[11]

The purpose of this thesis is to examine, within the frameworks of domestic catastrophe operations in Canada, the state and characteristics of the relationship between the civilian emergency management agencies, the CAF, and local communities. Using empirical data from Key Informant interviews, focus groups, and desk reviews of documents, the study examines the institutional, organizational, and cultural factors that influence civil-military collaboration during extreme events triggered by natural forces. The study focuses primarily on identifying barriers against efficient cooperation, evaluating stakeholder opinions, and determining possible policy approaches to enhance the effective implementation of existing policies

The research builds on existing literature on civil-military coordination in non-traditional roles, particularly within Western democracies, by offering a focused analysis of the Canadian context. It contributes new insights into how federalism, institutional arrangements, and procedural interpretations shape the integration of military support in domestic disaster response. While existing studies have explored civil-military coordination in civilian-led disaster response systems, particularly in Western democracies, this research contributes a Canadian perspective grounded in primary data from military and civilian stakeholders—highlighting context-specific tensions and governance challenges that remain under-examined. This study offers a grounded, context-sensitive analysis of the Canadian experience from the late 1990s to the early 2020s, guided by a comparative analysis of experiences and knowledge from other countries.

1.2. Background and Context

As climate change continues to drive more frequent and severe disasters, rethinking how institutions, policies, and partnerships shape civil-military cooperation has never been more urgent.[12,13] As a result, every level of government—including the CAF—has been forced to take on new responsibilities to respond to these growing threats.[5] Emergency management systems across Canada now face a double burden: growing public expectations for timely and coordinated disaster response in the face of climate-related hazards, and structural barriers such as fragmented governance, inconsistent civilian preparedness, and over-reliance on military support that complicate effective service delivery.[2,8] This backdrop sets the stage for investigating the questions about why Canada's disaster response system is under pressure and why and how the CAF is playing an increasing role.

1.2.1. Federalism and Canadian Emergency Management

Canada's federal structure is highly decentralized.[14] Emergency management responsibilities are divided among federal, provincial, and municipal governments, as well as non-governmental organizations (NGOs), such as the Red Cross.[15] This setup creates both opportunities and challenges for disaster governance.[16] Local governments, often the first responders, bring invaluable community-level knowledge. However, they frequently lack the resources to manage large-scale crises independently.[17] While the federal government provides support—mostly through Public Safety Canada, which handles national emergency coordination—provincial governments act as primary responders, offering first resources and coordination.[18]

During major disasters that cross municipal or provincial boundaries, this layered system can create serious coordination problems.[15] Although the Federal Emergency Management Act(2007) outlines the responsibilities of federal departments, it provides only vague guidance on the role of the CAF, leaving room for interpretation.[19] This uncertainty surrounding jurisdictions and military involvement often makes collaboration more challenging during emergencies.[11] According to Botha[3] , the collaborative framework between civil agencies and the military is conceptually ambiguous due to underlying philosophical differences. In military doctrine, the end state of emergency management is clearly defined, typically focusing on task-specific objectives during the response phase.[3] In contrast, civilian emergency management tends to adopt a more context-dependent approach, where the boundaries between response and recovery are often fluid

and overlapping.[3] Henstra[13] reinforces this incongruity, noting that emergency management responsibilities in Canada are widely dispersed and jurisdictionally blurred, with unclear expectations placed particularly on municipal governments. These ambiguities complicate the integration of military support into a system where roles, mandates, and intergovernmental coordination mechanisms remain inconsistently defined.

1.2.2. The Changing Domestic Role of the CAF

Historically, the CAF's domestic disaster deployments were rare and typically reserved for extraordinary circumstances, such as the 1997 Red River flood in Manitoba[8,20] or the 1998 Québec ice storm.[21] Military assistance was seen as an absolute last resort.[5]

This approach aimed to preserve the predominance of civilian authority and avoid the militarization of domestic affairs—that is, the gradual normalization of military involvement in roles traditionally managed by civilian institutions, such as emergency response, logistics, or coordination. Militarization in this context does not simply refer to the presence of military assets or personnel, but rather to a shift in authority, decision-making, or operational control from civilian agencies to the military. For instance, the deployment of a CAF Hercules aircraft to rescue stranded civilians is an example of military support—not militarization—because it remains under civilian request and command structures. If the CAF deployed the Hercules and took over the command of the response, this becomes militarization.

However, over the past years, the CAF's domestic deployments have increased dramatically. For example, from 2010 to 2015, there were nine CAF deployments for domestic emergencies, whereas from 2016 to 2020 they increased to 15, and from 2021 to 2024, 23 CAF deployments for domestic emergencies occurred.[22] Under Operation Lentus—the CAF's umbrella plan to capture requests for assistance to natural disasters, the military has been called out 47 times since 2010[22] to support responses to floods, wildfires, and severe storms. Importantly, these deployments are reactive, not proactive, and are initiated under civilian authority when provincial capacities are overwhelmed.

However, this evolving operational reality highlights a structural challenge: the CAF remains primarily designed and resourced for the traditional defence of Canada and North America, and for international deployments, not for sustained domestic emergency response. As a result, a growing gap has emerged between the CAF's formal mandate and its de facto role within

Canada's disaster management landscape. This misalignment raises concerns about institutional readiness, resource allocation, and the long-term sustainability of relying on military assets to fill recurring gaps in civilian emergency capacity.[23]

Between 2019 and 2022, military responses to natural disasters became nearly continuous across Canada. In 2021 alone, there were seven provincial requests for military assistance, not counting over a hundred pandemic-related deployments. In 2023, during widespread wildfires in the Yukon, Alberta, Quebec, and Nova Scotia, CAF support assistance was required—highlighting the growing dependency on specific military resources during climate crises.[4,23] Despite the rapid increase in domestic operational demands, official military policy has not fully evolved to reflect the CAF's growing involvement in disaster response.[24,25] The CAF remains primarily structured, trained, and resourced to fulfill its core mandate: the defence of Canada and North America, and participation in international operations.[6,7] This has created a growing tension between the military's traditional role and the functional demands placed upon it during increasingly frequent domestic emergencies. While there is broad agreement that the CAF's primary focus must remain on national defence, its repeated involvement in domestic operations raises essential questions about institutional preparedness, resource allocation, and the sustainability of this dual expectation.

1.2.3. Rising Disaster Risk and Climate Change

Climate change is reshaping Canada's disaster landscape in dramatic ways. Wildfires, floods, and extreme weather events are now affecting every region of the country.[12,13] The rising number of severe storms in the Atlantic provinces reflect such changes.[26] Similarly, the devastating spring floods in Eastern Canada in 2019,[27] and the unprecedented wildfires that swept British Columbia in 2021[28] were associated with a changing climate. As global average temperatures rise and weather patterns become more erratic, these kinds of events are expected to become even more frequent and destructive.[29]

In Canada, many provinces and municipalities lack sufficient personnel, funding, or equipment to handle large-scale emergencies independently.[15] This has led to a growing dependence on the CAF, which is often seen as a fast, capable response force.[3] But as some scholars warn, the more the military fills these gaps, the more it risks discouraging long-term investment in building strong civilian disaster management systems[11] and diverts time and resources from its core mandate to defend Canada.

1.2.4. Challenges in Military Response During Domestic Disasters

Civil-military coordination in Canada continues to face significant institutional and organizational barriers. Role uncertainty, the absence of a clearly defined boundary between the response and recovery phases (which often leads to ambiguity regarding the end state for both civilian agencies and the military[3]), and poor integration between planning and response systems are among the most significant problems.[8] While the CAF operates with centralized, formal chains of command, civilian agencies tend to be more decentralized, relying heavily on networks of interagency coordination.[9]

These two cultures do not always mesh well. CAF personnel often follow strict protocols, while civilian authorities sometimes expect rapid, flexible support with little formal preparation.[8] Without clear agreements, joint training, or established procedures before disasters strike, these mismatches can seriously hinder effective coordination.[30]

1.2.5. Comparisons and Models between States

Several developed countries have adopted more proactive and organized approaches to civil-military disaster cooperation. In the United States (US), for example, the state governors can deploy the National Guard without prior federal authorization under state active duty or Title 32 status; these deployments—especially during large-scale disasters—are often coordinated with the Department of Homeland Security and Federal Emergency Management Agency (FEMA)[i] to ensure unified response efforts and access to federal support.[31,32]

New Zealand has a centralized system where disaster response is coordinated by a National Controller and senior ministers, enabling quick decision-making and the seamless deployment of military support.[33,34] These examples demonstrate that effective military involvement in domestic emergencies relies on clear legal frameworks, joint planning with civilian agencies, and strong doctrinal alignment. In contrast, Canada's reliance on ad hoc, case-by-case decision-making often results in scattered, inconsistent practices.[11]

1.3. Research Problem

This study aims to critically examine the coordination challenges and procedural ambiguities that arise when the CAF is deployed in response to domestic natural disasters. It explores how gaps in intergovernmental communication, unclear mandates, and inconsistent application of existing

frameworks affect the timeliness and effectiveness of such deployments. These include procedural delays, jurisdictional ambiguities, and gaps in coordination between federal and provincial authorities that can complicate timely deployments during domestic emergencies.[11,13] While the Emergency Management Act (2007) lays out broad responsibilities for government participation, it says little about the CAF's specific role, limitations, or coordination mechanisms.[19] As a result, requests for military assistance are handled differently across jurisdictions, often through inconsistent processes. During high-pressure situations, the absence of standardization can lead to significant delays in decision-making, confusion among stakeholders, and an inefficient use of critical resources.

Canadian civilian authorities and military personnel often approach joint operations with very different assumptions about mandates, capabilities, and chains of command.[8] While the CAF relies on formal command structures and strict operating procedures, civilian emergency services tend to work through more informal networks and improvisation. These cultural and procedural gaps make coordination difficult and weaken the overall coherence of response efforts.[9,30]

Adding to these operational challenges is a worrying trend toward institutional reliance on the CAF. As provinces and municipalities continue to struggle with increasingly complex and prolonged disasters, they are turning to the military for help more often—and for a broader range of tasks, many of which fall outside the CAF's traditional expertise.[4,35] This shift threatens to erode the longstanding principle that military intervention should be a "last resort" within national borders. If the CAF continues to act as a de facto first responder, there is a risk of distorting public expectations, undermining civilian preparedness, and blurring the lines between defence operations and public safety services.[5,21]

Despite growing concerns about these issues, civil-military coordination in Canadian disaster response remains an under-researched area. As climate change accelerates and emergency systems face even greater strain, the lack of comprehensive knowledge and guidance on this topic represents a serious vulnerability.

1.4. Climate Change and Disaster Trend in Canada

Climate change is already having a profound impact on Canada. Rising sea levels, more frequent and intense weather events, and significant temperature increases are reshaping Canadian society,

the economy, and the environment.[36] Since 1948, Canada's average annual temperature has risen by 2.0 °C.[37] Weather shifts have affected each season differently. While summer temperatures rose only 1.5°C, winter temperatures rose by 3.3°C. These trends varied regionally. British Columbia, the Prairies, and Northern Canada had the warmest winters. Southeast Canada warmed less than 1°C during the same time period.[37] Northern Canada's average annual temperature rose by 2.3°C, which is three times the global rate.[38] In the Yukon and Northwest Territories, the annual mean temperature rose by 3.5°C between 1948 and 2016.[38]

These climate shifts have fueled devastating natural disasters, including floods, wildfires, heat waves, and hurricanes.[39,40] For instance, in 2021, Lytton, British Columbia broke Canadian temperature records, reaching an unprecedented 49.6°C just before suffering a catastrophic wildfire.[41] That same year, British Columbia also experienced historic flooding following a series of extreme storms, forcing nearly 20,000 people to evacuate.[42] In 2021, Canada experienced numerous category 2 tornadoes with winds of 180 to 220 km/h. The June 2021 Québec twister and the Barrie, Ontario tornado on July 15, 2021 were noteworthy occurrences.[43,44]

As disasters become more intense, military deployments to support disaster response have increased. From 1997 to 2024, military involvement in disaster response in Canada was evident. In 1997, during the Red River Flood in Manitoba, the largest number of military personnel was deployed since the Korean War.[45] The intensity of response has increased over time, and disasters have also increased in frequency. From 2019 to 2022, there were 16 military responses to nature-triggered disasters.[46] Major General Paul Prevost (then commander of the Army) testified in the Canadian Parliament that, in 2021, there were seven requests for military assistance to provincial situations, not including the 118 pandemic-related demands.[47] In 2023, the wildfire in Nova Scotia created a significant disruption across the eastern coast, with smoke also reaching the east coast of the US.[48] During this nature-triggered disaster, Canada deployed CAF to assist,[49] notably, sending 100 members from the Royal Canadian Regiment with Type III firefighting equipment.[22]

The use of CAF personnel in domestic emergency response—particularly through formal Requests for Assistance from provincial or territorial authorities—has remained a subject of ongoing debate, especially concerning the appropriate scope and frequency of such support. For example, the 1997 Red River flood response was highly efficient from the perspective of

emergency management, and successful despite certain technological limitations[50] of the time compared to today's advanced capabilities. The military viewed the assistance as "extremely successful",[51] yet there were criticisms around this military response. A research study by Emdad[52] discussed how, during this flood response, CAF supported the Manitoba Emergency Management Organization (MEMO) and the Royal Canadian Mounted Police (RCMP). It was pointed out that the CAF had shown a "Big-Brotherly'' attitude to force evacuations in the rural areas of Manitoba using coercive measures to some extent. The forced evacuations disrupted the community's ability to cope and respond to the flood, ultimately eroding its social fabric.[53] The military also ignored the "Local Knowledge"[51], which led to the evacuation of people to the southern flood-vulnerable zones of Winnipeg.[52] Due to the military's lack in local knowledge, their actions were inconsistent and confusing, leading to a disconnect between local residents and military responders.[51,52] The relationship between local people and the military also became complex because of the lack of sensitivity to local points of view, and municipalities were facing issues due to the rigid chain of command in the military.[52] Other issues regarding this civil-military response included miscommunication between local authorities and the military; a misunderstanding of the military operational structure by the local authorities; and a mutual absence of understanding of the limitations of both the civilian and military authorities.[51] The military, in particular, had issues using information from outside sources and also lacked comprehensive joint operations procedures and information system compatibility.[51,53]

In 2022, after Hurricane Fiona struck Atlantic Canada, former Canadian national security adviser Richard Fadden warned a parliamentary committee that federal administrations had depended too much on the military to address domestic crises, risking their "unit of function".[47] Even the Canadian Red Cross, the leading not-for-profit responder to disasters, has expressed concerns regarding military involvement during nature-triggered events. Canadian Red Cross CEO, Conrad Sauve, said, "We need to build that standby capacity that civilian capacity needs to be built up so we have a deployable capacity that's not military." [54] He added the point "if this is clearly in the civilian role. The military has another role and [needs] to be brought in as a last resort."[54] Due to the increased frequency of nature-triggered disasters, the resources of the affected communities are being exhausted, leading to calls for external resources or the mobilization of military resources. In 2023, the military was deployed during the Alberta, Quebec, and Nova Scotia wildfires, and the then Chief of the Defence Staff, Gen. Wayne Eyre, warned that

the military capacity was strained due to the demand of military in nature-triggered disaster response.[55]

Table 1.1. Provincial and Indigenous Reserve Requests for Federal Assistance during Nature-Triggered Events in Canada (2014–2020)[22,56]

Year	Nature-triggered extreme event	Location by Province	Provincial request	Request for the deployment from the indigenous reserves
2014	Flood	Manitoba	yes	no
	Flood	Northern Ontario	yes	yes
2015	Wildfire	Northern Saskatchewan	yes	no
	Flood	Kashechewan, Ontario	yes	no
2016	Wildfire	Fort McMurray, Alberta	yes	no
2017	Wildfire	British Columbia	yes	no
	Wildfire	Manitoba	no	yes
	Flood	Quebec	yes	no
	Flood	Kashechewan, Ontario	yes	yes
	Ice storm	New Brunswick	yes	no
2018	Winter storm	Quebec	yes	no
	Wildfire	British Columbia	yes	no
	Wildfire	Manitoba	yes	yes

	Flood	British Columbia	yes	no
	Flood	Kashechewan, Ontario	yes	yes
	Flood	New Brunswick	yes	yes
2019	Wildfire	Pikangikum First Nation, Ontario	no	yes
	Hurricane	Nova Scotia	yes	no
	Flood	New Brunswick, Quebec, and Ontario	yes	yes
2020	Winter storm	Newfoundland and Labrador	yes	yes

NOTE: The selected time period was from 2014-2020 as the Public Safety Canada Disaster Database is updated till 2020. More recent data, from 20021-2025, are not available with details on location and by type of disasters.

Source: i) Department of National Defense. (2024, July 22). *Operation LENTUS* . https://www.canada.ca/en/department-national-defence/services/operations/military-operations/current-operations/operation-lentus.html; and

ii) Public Safety Canada. (2018, December 21). Canadian Disaster Database: Search results. Government of Canada. Retrieved July 20, 2025, from https://cdd.publicsafety.gc.ca/

A summary of nature-triggered disaster events in Canada from 2014 to 2020 which involved requests for the deployment of military forces and coordination, is presented in Table 1.1. Here the focus is on the nature-triggered disasters and other types of disasters are not taken into account. The data presented here reveal several important patterns in federal and military disaster response. For example, floods and wildfires were the most frequent events requiring provincial requests for assistance, highlighting the provinces' consistent role in initiating federal support under Canada's decentralized disaster management system. Notably, the column labeled "Request

for the deployment from indigenous reserves" refers to formal requests from Indigenous reserves or provinces that specifically sought assistance.

While my thesis research primarily focuses on provincial (non-Indigenous) requests to examine broader civil-military coordination arrangements, the data also reveal that Indigenous community requests appeared recurrently, often overlapping with provincial requests. For instance, repeated flooding in Kashechewan, Ontario, led to both provincial and Indigenous community requests, reflecting the chronic vulnerability of this community. In some cases, Indigenous communities' requests for reserve assistance were placed in the absence of provincial requests, such as the 2019 wildfire affecting Pikangikum First Nation in Ontario. Regional patterns indicate that while provinces like British Columbia frequently request assistance in wildfire responses, Indigenous reserve requests were concentrated in specific communities facing persistent hazards including floods, avalanches, fires.

Overall, the table highlights the central role of provinces in disaster response requests, while also drawing attention to the acute and recurring vulnerabilities faced by the Indigenous communities. Although Indigenous community-requests are not the primary focus of this thesis research, they represent a significant area for future research, particularly in exploring risks to the most vulnerable communities, gaps in local capacity, and the adequacy of national emergency management frameworks in addressing Indigenous disaster resilience.[22,56]

1.5. Goals and Objective

This study is driven by a growing recognition that, while Canada has a formal mechanism for military support through Requests for Assistance (RFAs), there remains a lack of consistent and coordinated planning between federal and provincial authorities on how to integrate CAF support into civilian-led emergency management operations effectively. Presently, provincial and territorial emergency management systems—and their mechanisms for coordinating with federal military support—are often ad hoc, inconsistent, and reactive, with significant variation across jurisdictions. This creates delays in mobilization, duplicated efforts, confusion about leadership roles, and ultimately weaker disaster responses. Beyond structural issues, there are also challenges in how civilian and military actors communicate and work together. Differences in organizational cultures, such as approaches to planning, command structures, and communication—can create real obstacles to effective collaboration.

In this context, the overall goal of this research is to explore how Canada's disaster management system can be strengthened by improving coordination between civilian and military actors. To achieve this overarching purpose, the research is guided by the following three specific objectives:

1. **To examine intergovernmental coordination systems in Canadian disaster response**, with particular attention to how existing legislative, institutional, and command structures influence the roles and interactions of civilian and military actors during emergencies.
2. **To analyze inter-organizational coordination among the diverse stakeholders involved in domestic emergency management**, including federal, provincial, and municipal authorities, and non-governmental organizations—in order to understand how these actors communicate, plan, and operate collaboratively (or in conflict) during crisis situations.
3. **To identify the main barriers and opportunities for improving collaborative capacity and response effectiveness in large-scale emergencies**, as perceived by civil and military stakeholders, and to propose evidence-based recommendations for strengthening civil-military cooperation and overall emergency management in Canada.

These goals are closely interconnected. Together, they underscore the pressing need for a disaster governance system that not only integrates effectively military capabilities but also strengthens the leadership and capacity of civilian institutions. Ultimately, the study aims to make two key contributions: adding new knowledge to the academic field of civil-military relations in disaster contexts and providing practical guidance to policymakers and emergency management professionals as they prepare Canada for the future.

1.6. Methods Overview

The thesis employs a qualitative, exploratory approach to delve into the dynamics of civil-military coordination during domestic disaster response in Canada. Given the complexity of disaster governance, which spans multiple levels of government and involves diverse organizations, qualitative methods are the best fit for capturing the nuanced experiences and perspectives of key stakeholders.

Rather than focusing solely on structures and policies, this study is especially interested in the lived realities: how institutions interact in practice, how individuals perceive challenges, and

where they see opportunities for improvement. The goal is to produce rich, detailed insights that would be difficult to achieve through surveys or other quantitative techniques.[57,58]

1.6.1. Research Design and Justification

This study is grounded in empiricism, an epistemological approach that emphasizes knowledge derived from observed and experienced phenomena.[59] Empiricism asserts that understanding is built through systematic collection and analysis of data gathered from the real world, rather than solely through abstract reasoning or theory.[57] Within empirical research, two perspectives are often distinguished: *emic* and *etic*. The *emic* perspective seeks to understand phenomena from within the cultural or social group being studied, capturing meanings, experiences, and interpretations as they are understood by the insiders themselves.[60] In contrast, the *etic* perspective approaches analysis from an external, often comparative or theory-driven standpoint, applying frameworks that may not originate from within the studied context.[61]

Given the focus of my thesis research on civil-military coordination in Canada's domestic disaster response and recognizing the importance of stakeholders' perspectives, an emic perspective was adopted within an empirical approach. This allowed the research to capture how stakeholders themselves (emergency managers, military personnel, and government officials) perceive coordination practices, challenges, and institutional dynamics—and how they see and interpret the concerned issues. Such an approach was essential because understanding civil-military disaster coordination requires insights into practical realities, operational norms, and context-specific meanings that may not be fully captured through external or purely theoretical analysis.[62] Moreover, because empirical research on Canada's domestic civil-military cooperation remains limited, employing an exploratory emic approach enabled the study to remain open to unexpected findings, build knowledge inductively from stakeholder experiences, and develop insights grounded in the realities of those directly engaged in disaster response operations.

1.6.2. Methods of Data Collection

Three main instruments of data collection were applied: a multi-stakeholder focus group discussion (FGD), semi-structured key informant interviews (KIIs), and a systematic review of relevant documents.

Key Informant Interviews

A total of 26 semi-structured interviews of Key Informants—people in senior or operational roles in federal (including the CAF), provincial, and local emergency management, those from non-governmental organizations (like the Canadian Red Cross), as well as academics. Interviewees were chosen based on their direct participation in civil-military coordination policies, policy formation, or disaster response activities, including strategic planning (Appendix A). As the participants were from various parts of Canada, 45- to 90-minute interviews were conducted virtually to maximize accessibility.

An interview guide was developed by the researcher in consultation with the thesis supervisor and committee members to ensure consistency across interviews, while also allowing flexibility to follow up on participants' unique experiences and insights (Appendix I and J). Questions centered on subjects including institutional mandates, coordination strategies, operational difficulties, interagency communication, and recommendations for bettering cooperative disaster response. With informed permission, interviews were audio-recorded and then transcribed for study (Appendix F and D).

Focus Group Discussion

Participants from federal agencies such as the CAF, provincial emergency management offices, NGOs, and local authorities formed a multi-stakeholder focus group to complement the KIIs and promote cross-sectoral communication. A total of ten (10) participants attended the session, which lasted approximately 100 minutes (Appendix E and G). The FGD provided a forum for interaction among stakeholders and helped reveal commonalities, conflicts, and emergent themes.[63] Using open-ended questions, the researcher guided the conversation on the same topic areas as the interviews.

Desk-Review of Documents

The third instrument comprised a systematic review of pertinent legislative frameworks, operational guidelines, policy papers, and academic literature. Among the sources were the Emergency Management Act[19], federal and provincial emergency plans, CAF doctrines , after-action reports, government consultation summaries, and scholarly research on civil-military coordination. This triangulation of all material and sources allowed comparison between official policy and stakeholder impressions as well as to place the main facts in perspective.[64]

A structured search strategy was employed to ensure rigour and replicability. [65] A broad set of keywords was applied across multiple databases, namely Google Scholar, ResearchGate, JSTOR, SpringerLink, Wiley Online Library, and ScienceDirect, for scholarly-work sources. Government documents were obtained primarily from FEMA.gov, PublicSafety.gc.ca, DHS.gov, and related sources, while news articles were drawn from CBC.ca, Globe and Mail newspaper. The initial search yielded a total of 459 sources, which were screened for direct relevance to the themes and topics concerned. The distribution of the sources is summarized in Table 1.2. After applying quality and inclusion criteria, 150 relevant references were reviewed, with 58 sources selected for final analysis.

Table 1.2. Source Type Categorization and Search Configuration

Source type	**Source**	**Configuration**
Academic Articles & Research Papers (n=234)	Google Scholar, ResearchGate, JSTOR, SpringerLink, Wiley Online Library, ScienceDirect	"military engagement in disaster relief", "emergency management frameworks", "institutional structures for disaster response", "legal mandates for military in emergencies", "comparative studies on disaster governance", "military logistics and rapid response", "role of armed forces in domestic crises", "national security and disaster management", "military doctrine in humanitarian assistance", "adaptive capacity in disaster response"
Websites (News & Blogs) (n=78)	CBC.ca, UN.org/news, United States Today.com, ForeignPolicy.com, VisionOfHumanity.org, DisasterPhilanthropy.org, ReliefWeb.int	"Emergency Management Act", "National Defence Act", "disaster response coordination policies", "federal emergency management policies", "command and control in disaster relief", "military deployment protocols in emergencies", "civil authority and military engagement policies", "legal frameworks for disaster response", "FEMA guidelines on disaster relief", "national emergency preparedness plans", "civil protection frameworks" National Guard

Government & Institutional Documents (n=122)	FEMA.gov, PublicSafety.gc.ca, UNDRR.org, DHS.gov, Legislation.govt.nz, NaturalResources Canada.ca, Canada.ca/defence, NZDF.mil.nz, Defense.gov	"Emergency Management Act", "National Defence Act", "disaster response coordination policies", "federal emergency management policies", "command and control in disaster relief", "military deployment protocols in emergencies", "civil authority and military engagement policies", "legal frameworks for disaster response", "FEMA guidelines on disaster relief", "national emergency preparedness plans", "civil protection frameworks"
Books & Reports (n=25)	WorldCat.org, Google Books, Springer.com, Cambridge.org, TaylorandFrancis.com, OpenLibrary.org	"military support in disaster relief", "comparative disaster management strategies", "climate adaptation and emergency response", "defense policies for natural disaster management", "case studies on military engagement in domestic emergencies", "impact of climate change on military disaster response", "institutional structures for civil-military cooperation", "policy recommendations for disaster resilience", "historical analysis of military disaster intervention", "best practices in emergency response"

1.6.3. Data Analysis

Following Braun and Clarke's[66] six-phase approach, all qualitative data—interview transcripts, focus group notes, and document excerpts—were examined thematically. This comprised initial coding for data familiarization, theme development, theme refinement, and final interpretation (Annex G). The study utilized NVivo qualitative analysis software (version 15) to assist in organizing and coding the vast dataset. Codes were inductive—emerging from the data—and deductive, informed by the literature and research questions. Codes were grouped into broader categories through a process of constant comparison, resulting in the development and refinement of key themes. Particular attention was paid to both recurring narratives and divergent views, as

these often illuminated institutional or cultural tensions within Canada's emergency management and coordination systems.

Ethical Considerations

Approved by the Research Ethics Council of the University of Manitoba (Appendix C), the studies followed the Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans (TCPS2) (Appendix B). Each participant received informed consent documents detailing the goal of the study, voluntary character of participation, and confidentiality policies. To safeguard participant identity, interview recordings and transcripts were securely kept and anonymized. Where quotes are utilized in the results, no identifying information is included unless specific permission was obtained.

Given the involvement of government and military personnel, particular attention was paid to ensuring that participation was entirely voluntary, that informed consent was obtained, and that responses did not imply official endorsement or institutional positions. Although participants were urged to talk from their professional expertise, they were informed that they could withdraw or refuse to respond to any question without consequences. Ethical principles were given top priority.

1.7. Significance of Research

This study tackles one of the most urgent challenges facing Canada's disaster management system today: how to ensure effective coordination between civilian agencies and CAF during climate-driven emergencies. As climate change accelerates and disasters become more frequent, longer-lasting, and more intense, the sustainability and efficiency of Canada's response systems are under serious pressure.[12] The stakes are high. In addition to the devastating human and economic costs of disasters, poorly coordinated emergency responses can erode public trust, weaken institutions, and leave communities more vulnerable to future risks. With climate impacts intensifying, there is a growing need for a disaster governance model that is more resilient, adaptive, and balanced between military and civilian capacities. This study makes several significant contributions—both to the advancement of knowledge and to finding the solution to practical problems.

First, the thesis fills a gap in academic literature. While civil-military cooperation has been studied extensively in conflict and humanitarian intervention settings,[7] much less attention has been paid to how coordination within the domestic disaster response systems of developed, federated countries like Canada occurs. Existing research often examines legislation, doctrine, or

organizational structures narrowly, without incorporating the direct voices of key stakeholders who are involved in response operations.[11] By gathering empirical data from 26 key informants and a multi-stakeholder focus group, this study offers a grounded, context-sensitive analysis of Canada's real-world challenges and opportunities.

Second, this study provides actionable insights for and to policymakers, emergency management professionals, and military planners. The findings suggest practical ways to strengthen civil-military coordination—such as clearer policies, enhanced joint training, and more effective communication channels—that could improve Canada's overall disaster response capacity. This analysis is grounded in the working assumption that the CAF should remain in a supporting role, deployed only upon request from a provincial or territorial authority upon approved by the Minister of Defence and in alignment with the existing civilian-led emergency management framework. The goal, therefore, is not to expand the military's mandate, but to ensure that when it is engaged, its integration is efficient, coordinated, and sustainable. Third, by comparing Canada's experience with models from other countries, such as New Zealand and the United States, the study highlights how institutional frameworks can either support or hinder effective civil-military disaster coordination. These comparisons offer valuable lessons for designing a more integrated, proactive Canadian system.

Finally, this study highlights an entity often overlooked in discussions of military involvement in domestic crises: NGOs and civil society actors. While much of the debate tends to centre on the roles of government and the military, NGOs play a critical part in emergency preparedness, response, and recovery. By incorporating their perspectives, the research highlights the importance of cross-sectoral trust, inclusivity, and building resilience at the community level. Understanding how NGOs interact with both government and military agencies reveals that effective disaster management is not simply a technical or institutional challenge—it is also a deeply social and participatory process.[9]

Overall, this research is important not just because of what it reveals about Canada's current challenges, but because of what it offers for building a better, more sustainable disaster governance system for the future. The recommendations that emerge from this study aim to inform real-world reforms that can help Canada adapt to an increasingly complex and challenging emergency landscape.

1.8. Organization of the Thesis

This thesis is organized into four Chapters:

Chapter 1, the Introduction, sets the purpose and urgency of the research. It situates the study within the broader field of catastrophic governance, outlining the research challenges, objectives, and key questions. This chapter also discusses the theoretical background, a brief review of the chosen data collection methods, and the importance of the research.

Chapter 2 presents a comparative analysis of the institutional and legal frameworks governing military involvement in domestic disaster response in Canada, the United States, and New Zealand. By comparing these countries' governance structures, legal mechanisms, and coordination models, we can identify the impacts on the speed, efficiency, and sustainability of military assistance in disaster responses.

Empirical data from key informant interviews and a multi-stakeholder group discussion, including military personnel, public safety authorities, municipal emergency managers, and NGO representatives, are analyzed in Chapter 3. It draws attention to the primary institutional issues: institutional hurdles, poor communication, and cultural incompatibility. This chapter examines and discusses operational issues and stakeholder recommendations, particularly concerning role clarity, cooperative training, and interagency cooperation and preparation.

Chapter 4 presents the Discussion and Conclusions, integrating key findings from both the comparative and empirical components of the study. Drawing on cross-national best practices—particularly from the United States and New Zealand—regarding the integration of military personnel into civilian-led disaster response systems, and informed by stakeholder feedback gathered during interviews and focus group discussions, the chapter presents evidence-based policy recommendations. These aim to enhance institutional interoperability, streamline deployment protocols, and balance the critical role of military support with the urgent need to strengthen Canada’s civilian emergency management infrastructure. The chapter concludes by summarizing the study’s contributions, acknowledging its methodological and thematic limitations, and outlining potential directions for future research in civil-military disaster coordination.

1.9. Limitations of the Study

As Patton[62] notes, qualitative research is sometimes more focused on depth and context than on breadth or generalizability across settings. This study focused specifically on civil-military interactions within the framework of Canadian domestic crises caused by natural hazards; therefore, the results may not be applicable to other types of crises, such as pandemics or terrorist acts, where different coordination dynamics may emerge.

To ensure that the most appropriate and informed participants were selected, purposive sampling was employed, targeting individuals directly involved in civil-military coordination, disaster response, and emergency management across federal, provincial, municipal, and NGO sectors. Participants included senior representatives from Public Safety Canada, provincial emergency directors, CAF (both Regular and Reserve components), and key personnel from humanitarian organizations such as the Canadian Red Cross and Team Rubicon (U.S. veteran-led NGO focused on civil disaster response). Their inclusion was guided by their roles in recent major disaster responses (post-2019) and their institutional positions, which allowed them to speak authoritatively on operational procedures, coordination challenges, and policy developments. Additionally, participant information was verified through public records and organizational directories to ensure they had current or recent responsibilities relevant to the study's focus. These measures provided confidence that the data gathered reflected up-to-date, contextually relevant perspectives from individuals at decision-making and operational levels. Yin[67] highlights that case-oriented research provides rich data, but it may lack statistical generalizability, especially when institutional constraints or security clearance procedures restrict participant access. The study primarily relied on the purposeful selection of key informants from federal, provincial, municipal, military, and non-governmental sectors, which ensured representation from many stakeholders. Still, the relatively small sample size typical of in-depth qualitative research limits the extent to which the results can be considered representative of all actors within Canada's emergency management system.

A significant portion of the data was obtained through interviews with individuals in mid- to senior-level positions in emergency management and defence organizations. While their expertise in institutional procedures and coordination systems was invaluable, Richards[68] asserts

that elite interviews may have introduced bias, particularly when discussing inter-organizational cooperation, specifically concerning the practical challenges experienced at the field level.

Although all participants were assured anonymity and confidentiality, it is impossible to entirely rule out social desirability bias, particularly when discussing institutional shortcomings. Additionally, given the sensitivity of military operations and interstate ties, some respondents may have self-censored or given cautious answers. Thus, the results capture a moment of institutional dynamics that may change over time. Legislative changes, leadership changes, or future national crises could fundamentally affect coordinating methods. The study was conducted within a specific policy frame in Canada (2022–2024), when CAF installations and climate-driven disasters were under increased focus. This temporal constraint underscores the importance of future longitudinal research that tracks changes in civil-military cooperation over time.

1.10. Statement of contributions

I am the sole author for Chapters One and Four. I wrote the two chapters under the supervision of Dr. C. Emdad Haque. Chapters Two and Three have been developed for publication and these were co-authored manuscripts. Chapter Two manuscripts were co-authored by me as lead author, Dr. C. Emdad Haque. Chapter three was co-authored by Dr. C. Emdad Haque as first and me as second author and Dr. Kawser Ahmed as third author. In this paper both Dr. C. Emdad Haque and I contributed equally.

Based on Chapter Two, a paper titled as "Engaging Military with Domestic Disaster Response: A Comparative Study of Institutional Structure", has been accepted and is in press in "International Journal: Canada's Journal of Global Policy Analysis" (published by Sage Publishing). Based on Chapter Three, a paper titled "Challenges in Collaborative Domestic Emergency Management in Canada: Stakeholders' Perspectives on the Role of the Military" has been submitted to the journal "Contingencies and Crisis Management" (published by Wiley). This manuscript is under review.

Chapter 2: Engaging Military in Domestic Disaster Responses: A Comparative Study of Canada's Institutional Structure with the United States and New Zealand

2.1. Introduction

Climate change-related disasters are becoming more frequent and severe,[69] leading to widespread environmental[70] and societal impacts.[71] The intensified extreme weather events are triggering large-scale destruction, displacement, and economic losses.[72] Governments around the world are increasingly turning to their military forces for disaster relief, leveraging their logistical capabilities, rapid deployment capacity, and specialized training, as seen in various recent international extreme events.[73] However, the integration of military resources into domestic disaster response raises critical questions regarding governance, legal authority, and the distribution of responsibilities among the military and civilian authorities. In the existing literature, these challenges are presently being explored.[18,19,74]

Canada's approach to military disaster response is largely governed by the Emergency Management Act[19] and the National Defence Act,[75] which enable the Canadian Armed Forces (CAF) to assist provincial, territorial and municipal authorities when their capacities are overwhelmed.[19,75] These missions are carried out under Operation LENTUS which is activated when provincial or territorial authorities request federal assistance through the formal Request for Assistance (RFA) process, enabling rapid deployment of CAF resources to support civilian-led responses to floods, wildfires, storms, and other nature-triggered disasters.[22] Operations under LENTUS have demonstrated the military's unique capacities and the critical roles in providing emergency assistance such as strategic airlift.[23] However, concerns have been raised by stakeholders and experts regarding the sustainability of frequent domestic military deployments, the efficiency of interagency coordination, and the issues of maintaining civilian primacy in disaster governance.[76]

A comparative analysis offers some valuable insights into alternative models of military engagement in domestic disaster response. In the United States, the National Response Framework[77] and the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 establish federal guidelines for military assistance.[78] These frameworks function under the broader coordination of the Department of Homeland Security (DHS), with the Federal Emergency

Management Agency (FEMA[i]) serving as the lead operational body for disaster response. FEMA[i]'s emergency management doctrine is structured around five Mission Areas: Prevention, Protection, Mitigation, Response, and Recovery.[79] Military involvement is primarily integrated into the Response and Recovery mission areas, and is always positioned as a supporting role under civilian authority.[77,79] At the same time, the Posse Comitatus Act restricts military involvement in law enforcement in the United States .[77]

Emergency management in New Zealand is run under a centralized command system, governed by the Defence Act 1990[80] and the National Civil Defence Emergency Management Plan Order 2015.[81] The goal is to ensure efficient and rapid coordination with a high degree of interagency collaboration.

While Canada has an established framework for military involvement in domestic disaster and emergency responses, academicians and civilian stakeholders from various sectors have called for improving coordination and streamlining deployment protocols. The major issues highlighted in the literature include: 1) how the interagency collaboration can be strengthened; 2) how the bureaucratic barriers in military deployment requests (for example, delays in communication, lack of joint planning, unclear cost-sharing responsibilities, and inconsistent awareness of CAF capabilities among provincial authorities) can be removed (or at least minimized); and 3) what the designated thresholds are for military intervention in domestic emergency and disaster situations.[82] An additional question concerning whether a prioritization of investments in civilian emergency preparedness programs can help balance the reliance on military assistance, ensuring that military engagement remains a strategic supplement rather than a primary response mechanism, has also been raised.[82]

In recent years, Canada has seen a growing reliance on the CAFs for domestic disaster response, a trend driven largely by the increasing frequency and severity of climate-related emergencies. Between 1990 and 2010, the CAF was deployed six times for disaster relief operations**,** but this number rose dramatically to over 30 deployments between 2011 and 2020 about 500% or 5 times.[83] While the military's ability to provide rapid logistical and operational support has been widely recognized, concerns have emerged regarding the sustainability of using military personnel for civilian emergencies. Experts caution that frequent domestic deployments strain military resources, potentially affecting combat readiness and reducing the CAF's capacity for national defence.[84] Additionally, the financial burden of military-led disaster response is often

underestimated, as civilian agencies and policymakers tend to perceive the CAF as a readily available emergency force, without fully accounting for the long-term implications of such deployments.[84] In response to these concerns, some scholars have proposed alternative models, such as the establishment of a dedicated civilian disaster response force**.** Kikkert[85] suggests that Canada could create a specialized workforce focused exclusively on disaster response, reducing dependence on the CAF while enhancing national preparedness. This proposal aligns with broader efforts to ensure that military involvement remains a strategic supplement rather than a primary mechanism in domestic disaster management. As climate-related disasters intensify, policymakers must reconsider the role of the CAF in disaster response, balancing military readiness with the growing demand for emergency assistance.

In light of the above concerns and recognizing the military's critical importance, the present study aims to examine the institutional and legal frameworks that govern military engagement in domestic disaster response in Canada and brings about relevant comparative perspectives from selected Western developed countries, namely the United States and New Zealand. It specifically assesses the legislative instruments that authorize military assistance and establishes the coordination mechanisms between military and civilian agencies. These efforts enable to identify the lessons learned from experiences in various countries to assist refining Canada's civil-military disaster response framework. In this context, the research is guided by two central research questions: (1) What legislative and legal frameworks exist in Western developed countries to facilitate military engagement in domestic disaster response? (2) What experiences and lessons can be drawn from the countries studied to enhance the effectiveness of civil-military disaster response?

This chapter is organized under three parts: First, an analysis of the legal and institutional frameworks for military disaster response in Canada, the United Staes, and New Zealand is presented. Second, the strengths and challenges of each country-based system, identifying the key themes such as coordination mechanisms, legal authority, and civilian oversight are identified. Finally, key lessons and policy recommendations to improve Canada's approach to military's engagement in domestic disaster response are presented.

2.2. Methods

Since case-study-based research can provide[86] in-depth descriptions of and insights into a process

or phenomenon,[87] the country-case-study approach was adopted to comparatively examine institutional structure, and military deployment mechanisms in the three Western developed countries: Canada, the Unites States and New Zealand. These countries were selected not because they are identical, but because—despite their unique historical and institutional contexts—they share key characteristics that enable meaningful comparison. US is the closest neighbour of Canada which makes the collaborative exercises and missions easier. New Zealand has small military and civilian agencies which mirrors the Canadian military and civil agency size as well.

Nonetheless, the geographical and socioeconomic settings are different as Canada and the USA are in North America[88] and New Zealand is in Oceania.[89] The rationale for comparing the USA and New Zealand with Canada is grounded on consideration of various scale and comparability also. First, Canada and the USA share continental proximity and similar vast geographies: Canada spans 9.98 million km²[90] and the USA covers 9.84 million km².[91] Such a scale creates comparable logistical challenges during large-scale disasters, particularly for reaching remote northern or interior regions. Second, Canada's population is approximately 41 million with population density of 4.43 people per sq km,[92] while New Zealand has a population of 5.2 million and population density is 19.7 people per sq km .[93] This makes New Zealand's scale comparable to Canadian provinces such as British Columbia (5.5 million) and Alberta (4.8 million),[92] making its centralized disaster governance particularly relevant for provincial-level adaptations. Third, New Zealand exemplifies integrated civil-military coordination and centralized command efficiency; its National Civil Defence Emergency Management Plan emphasizes rapid coordination across government and military actors.[34] Fourth, the USA's National Guard system includes approximately 443,000 personnel,[94] serving as an intermediate force to reduce overreliance on regular armed forces—an emerging concern in Canada's current model.[3,5] Finally, climate change risks intensify the relevance of comparison: Canada's average annual temperature has risen 1.9°C since 1948,[95] the atmosphere in the territory of the USA has warmed by 1.2°C since 1901,[96] and New Zealand's land area and its atmosphere has warmed by 1.1°C since early 20th century.[97] Thus, despite differences in governance and scale, these countries provide contextually relevant lessons to inform institutional design, legal frameworks, and operational practices for strengthening Canada's civil-military disaster response system. These diverse settings highlight the importance of the context for the deployment of military besides civil administration at times of disaster situations.

In this thesis, the comparative qualitative analysis method systematically examines legal frameworks, command structures, and operational mechanisms governing military disaster response. A thematic approach categorizes key findings, ensuring a structured synthesis. Cross-referencing academic literature, policy documents, and citation of empirical case studies is made throughout the text to offer a nuanced understanding of how military resources are integrated into disaster response frameworks. Sources were evaluated and checked for credibility, and proper citations for ensuring academic integrity.

2.3. The Context: Increasing Climate Extremes and Military Operations in Canada

The frequency and severity of nature-triggered disasters such as floods, hurricanes, and wildfires has increased significantly worldwide due to climate change, resulting in substantial economic losses and human casualties.[73,98] Indeed, between 2000 and 2019,[99] the United Nations Office for Disaster Risk Reduction recorded 7,348 major disaster events, accounting for $2.97 trillion in economic losses and 1.23 million fatalities.[72] Although the number and rates of fatalities have decreased over the past 50 years, economic damage has surged, and intangible impacts, like mental health issues and cultural heritage loss, have emerged as prominent issues.[69]

In response to the increasing frequency of nature-triggered disasters, federal governments—including those in Canada, the United States, and New Zealand—have been relying more on military forces for disaster response. In 2023, the CAF assisted in wildfire containment,[100] while the United States[101] and New Zealand[102] engaged in humanitarian and disaster relief missions both domestically as well as across the Pacific. This trend is not unique to these countries; internationally, military forces have always played a crucial role in disaster relief. For instance, in Bangladesh, the Armed Forces Division collaborates with civil authorities during disasters, providing essential support in damage assessment, search and rescue, and relief delivery,[103] as seen during Cyclone Sidr in 2007.[104,105] During Typhoon Haiyan in 2013, the USA launched Operation Damayan, deploying over 13,400 military personnel, 80 aircraft, and 13 naval vessels—including the USS George Washington—to assist with humanitarian relief in the Philippines.[106] This response highlighted the growing role of militaries in humanitarian assistance and disaster relief (HADR) across the Asia-Pacific. Similarly, 7,500 members of the Turkish

Armed Forces were deployed to aid in disaster-response efforts in the southern part of Turkey after it was hit by a 7.8 magnitude earthquake in 2023,[107,108] while the German armed forces played a critical role in restoring infrastructure and logistics following severe storms and flooding in Germany in 2021.[109]

In the United States, military personnel have been called upon to assist in dealing with large-scale nature-triggered events numerous times in recent decades. For instance, in 2005, the USA government deployed 70,000 military personnel, including 20,000 federal military forces and 50,000 National Guard troops,[110] to assist with the aftermath of Hurricane Katrina, which remains one of the costliest natural disasters in the history of the country, with over 1,800 fatalities, $110 billion in total damages, and 1.2 million displaced people.[111,112] These global examples underscore the vital role of military forces in responding to nature-triggered disasters and highlight the need for new and robust policies and frameworks to ensure effective civil-military cooperation in times of emergency. Katrina marked a turning point in United States disaster response policy and revealed serious coordination gaps between civilian and military actors. As such, it continues to serve as a benchmark case in discussions around civil-military cooperation in emergency management.

In recent decades, Canada has been experiencing rapid climate change at a faster rate than the global average marked by rising sea levels, more frequent and intense weather extremes, and increasing average temperatures.[113] Since 1948, Canada's annual average temperature has increased by 1.7°C, with winter temperatures rising by 3.3°C.[12] These changes have led to significant ecological challenges, such as the drying of the boreal forest, facilitating the mountain pine beetle epidemic in British Columbia, which devastated 18 million hectares of trees.[114] In addition, extreme weather events, including floods, wildfires, heatwaves, and tornadoes, have been causing unprecedented destruction across the country[39]. In 2021, British Columbia experienced record temperatures, severe floods, and multiple Category II tornadoes.[40] In July 2024, devastating wildfires in Jasper, Alberta, forced mass evacuations and destroyed nearly 30% of the town's structures. The disaster caused significant environmental and economic damage, prompting federal emergency support.[115,116] To address the growing threat of climate-related disasters, in 2018, the Canadian government committed $2 billion over 10 years through the Disaster Mitigation and Adaptation Fund (DMAF) to enhance community resilience to climate-triggered disasters with structural and natural infrastructure projects.[40,117]

The impacts of climate change in Canada are most evident in the rising temperatures, changes in precipitation patterns, declining Arctic snow cover, fluctuating water levels in the Great Lakes, and longer summers.[118] Alarmingly, Canada is warming at twice the global average rate,[118] which has caused increasing the frequency of heatwaves and related hazards[119] and accelerated the decline in glacier and snow cover in the Arctic regions.[119] Such a rapid pace of environmental changes has given rise to unprecedented, extreme atmospheric events which have impacted civil infrastructure, agricultural production, industrial and energy infrastructure, and various vital socioeconomic factors affecting citizens' lives.

The CAF involvement in responding to nature-triggered disasters has increased significantly over the past few decades.[73] Figure 2.1 illustrates, for example, the major engagement of military forces under Operation LENTUS in response to nature-triggered disasters in Canada during the 1997-2023 period.[48] It is apparent that over time the frequency of deployments of military to nature-triggered disasters has increased, particularly since 2000 (Figure 2.1). The CAF played a crucial role in the response to the 1997 Manitoba Flood, deploying one tenth of its personnel to assist with the province's relief efforts.[120] Since then, other regions of Canada also experienced atmospheric extreme events that required military deployment; these include 1999 ice storms in southern Ontario and Quebec, 2003 wildfire in Kelowna, BC, 2010 Hurricane Igor in Newfoundland, 2011 and 2013 floods in Manitoba. Noticeably, major disasters caused by various types of hazards such as, floods, and wildfire occurred in 2017 (i.e. the same year) which required CAF’s engagement in different provinces. In 2023, CAF personnel were deployed after a series of wildfires resulted in significant disruptions and damage to Nova Scotia and other provinces.[48] Such conditions have changed the parameters of demand for CAF’s personnel and resources.

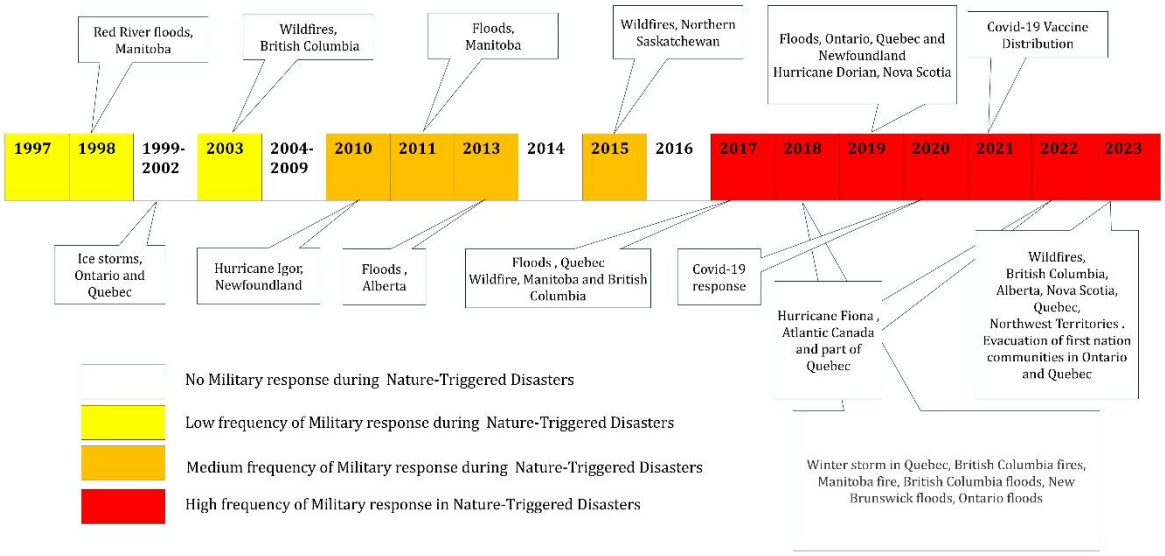


Figure 2.1. Major engagement of military forces under Operation LENTUS in response to nature-triggered disasters in Canada, 1997-2023[22]

This increasing demand for the deployment of military in domestic disaster response has raised some concerns.[48] In a 2021 testimony before the House of Commons Defence Committee regarding seven military response requests for provincial situations (excluding 118 pandemic-related requests), Major General Paul Prevost then Director of Staff for the Strategic Joint Staff, emphasized that demands on the military's resources have been steadily increasing in recent years.[47] Similarly, General Wayne Eyre, Chief of the Defence Staff (November 25, 2021 - July 18, 2024),[121,122] expressed concerns about the CAF's growing role in domestic emergency responses. He emphasized that while the military serves as a force of last resort, the increasing frequency and intensity of natural disasters have led to more frequent deployments, which strain the CAF's resources.[123]

2.4. The Contested Views of Military Involvement in Domestic Disaster Response in Canada

The civil-military cooperation is crucial to ensure effective preparedness and to minimize economic impact, thus promoting long term political stability through quicker recovery.[124] Specialized military personnel also bring valuable expertise to disaster logistics,[125] as seen in the Indian Tsunami and Haiti earthquake.[126] However, as effective civil-military collaboration

requires resources, continuous planning, coordination, and sensitivity to cultural contexts,[9] institutional structure must be developed well ahead of a major disaster-event.

From 2010 to 2023, as the frequency and severity of natural disasters escalated, the Canadian Armed Forces (CAF) became more heavily involved in domestic emergency response operations—reflected in more frequent deployments, longer mission durations, and increased mobilization of personnel and logistical assets such as airlift capacity, engineering support, and temporary shelters. Hudson[4] attributes this increase of nature triggered disasters to climate change, noting that the heightened severity of disasters has made CAF deployments more routine. Highlighting the financial implications of this trend, Saul[127] projected a significant rise in federal spending on military-led disaster responses by 2027, which necessitates a reevaluation of the CAF's domestic role. Some scholars assert that while domestic operations have historically bolstered public confidence in the military, challenges persist[128]. Fremis[130] explains that operations like Operation LENTUS often encounter coordination issues with civilian agencies, partly due to differences in command structures and a lack of joint training. While MacGregor,[131] citing the CAF's traditional focus on expeditionary missions over domestic preparedness, suggests a need to realign priorities, Shadwick[83] advocates for a balanced approach, recommending enhanced interagency collaboration and the development of civilian-led disaster response mechanisms to ensure military involvement remains supportive rather than undertaking primary responsibilities.

The increasing reliance on the CAF for domestic disaster response raises concerns about sustainability and effectiveness as well. In this context, Leuprecht[5] indicated the *moral hazard* of using the military as provincial first responders. In this context, “moral hazard” refers to the unintended consequence of provinces and territories increasingly relying on the CAF for disaster response, knowing that the federal government will authorize and fund military support when needed.[5] This dynamic reduces the incentive for provincial governments to adequately invest in their own civilian emergency management infrastructure, training, and personnel.[5] As a result, the CAF is being used not as a last resort, but often as a first response mechanism, which can strain military resources, detract from its core defence mandate, and create an unsustainable expectation for future emergencies.[5] To address domestic emergency response needs and to reduce dependence on the military, Kikkert[85] proposes establishing a non-military disaster workforce, like a Resilience Corps. The House of Commons’ Standing Committee on National Defence of

Canada echoes these sentiments, emphasizing the need for a strategic reassessment of resource allocation and advocating for improved civil-military coordination.[35] Expanding such initiatives could improve interoperability, response efficiency, and ensure that military involvement in disaster response remains an exceptional measure.

In Canada, despite the associated challenges, the integration of the CAF into the disaster-management cycle is both critically urgent and beneficial.[9] The nation's governance structure assigns primary responsibility for emergency management to provincial and territorial governments, with municipalities handling local implementation.[132] The federal government, including the CAF, becomes involved only upon formal request from these jurisdictions.[132] A layered governance structure can lead to delays in mobilizing military assistance, as the process requires navigating intergovernmental protocols and obtaining necessary approvals. The term "layered or tiered structure" refers to the multi-level system of emergency management in Canada, involving federal, provincial, municipal, and non-governmental actors. Each of these layers holds distinct responsibilities—such as planning, resource allocation, and operational response—which must align during a disaster. The absence of comprehensive, long-term policies further complicates the seamless integration of military resources into civilian-led disaster responses.[35,132] Additionally, disparities in provincial emergency preparedness and municipal resource limitations contribute to inconsistent response efficiency across jurisdictions. However, these shortcomings in civilian readiness are distinct from the capabilities and responsibilities of the CAF. Since the CAF is "a force of last resort" as outlined in the NDA, balancing their national defence role with increasing domestic disaster response demands remains a serious challenge.[133] Addressing these complexities requires clearer intergovernmental protocols and enhanced coordination between civilian and military authorities.

However, in the federal system, the lack of policy attention and long-term planning has remained a major weakness; cooperation and coordination among the jurisdictions remain a major challenge in Canadian disaster and emergency governance.[13] The emerging climate-related extremes are forcing Canada to pay attention to these issues; the ongoing policy debate and discourse underscore the complexity of military involvement in domestic disaster response, requiring in-depth investigations and multistakeholder deliberations.

2.5. Institutional Structures and Legal Frameworks of Civil-Military Cooperation in Canada, the United States, and New Zealand

As Canadian institutions and the associated policy and decision-makers can learn from comparative analyses of institutional structure and legal frameworks from other similar Western developed countries, this section is dedicated to analyzing such structures and frameworks governing civil-military cooperation in Canada, the United States, and New Zealand.

2.5.1. Canadian Institutional Structure of Civil-Military Coordination and Involvement of CAF in Domestic Operations

In Canada, the armed forces are intended to be deployed as a “last resort,” yet some experts point out that "last resort" is often defined rather loosely.[47] In general, there are five main reasons why Provinces or municipalities request assistance from the armed forces: a) military forces have an organized capacity to be deployed on short notice; b) they have specific training that allows them to operate in difficult situations; c) they possess unique resources, such as water filtering or airlifting capacity; d) their command, control, coordination, and communication (C4) system is interoperable with incident command systems (ICS); and e) there is a high degree of trust in the armed forces by the requesting authorities and citizens.[134–137]

The provincial government is responsible for coordinating with the federal government via Public Safety Canada , if the provincial authority determines it requires outside assistance. This is outlined in the Emergency Management Act.[138] Since the CAF falls under the authority of the federal government,[139] the federal authority (the Minister of National Defence) is responsible for dispatching them after a review by the CAF of the appropriateness of the request. In Canada, emergency management responsibilities are shared across municipal, provincial or territorial, and federal governments.[17] A Request for Federal Assistance (RFA) must follow a structured escalation pathway. Emergencies are initially managed at the municipal level, where local authorities deploy their own response resources as municipal authorities are typically the first responders to emergencies within their jurisdictions.[17] When an emergency exceeds local capacities, municipalities request assistance from their respective provincial territorial governments, which have the primary responsibility for emergency management within their

areas.[17] If the situation escalates beyond provincial or territorial capabilities, these governments may seek federal assistance via Public Safety Canada , and support from the CAF.[17]

Importantly, the protocol differs in the case of Indigenous Reserves. In these situations, the Chief or leadership of a First Nation community may make a direct request to Indigenous Services Canada (ISC), which then engages with Public Safety Canada and other relevant agencies to coordinate support.[140,141] If military assistance is required, Public Safety Canada initiates the RFA process with National Defence, similar to provincial protocols, but with added interdepartmental consultation due to overlapping jurisdictional responsibilities between ISC and provincial authorities.[140,141] However, this thesis will not focus on the Indigenous-specific emergency management process and will instead concentrate on the general provincial-federal coordination mechanisms.

Public Safety Canada plays a pivotal role in this process, serving as the primary federal coordination body during emergencies. According to the Interdepartmental Emergency Management Committee (IEMC) protocol, Public Safety Canada acts as the national lead for emergency management, overseeing federal coordination through the Government Operations Centre (GOC).[141,142] It ensures strategic oversight, interagency information sharing, and the harmonization of federal response actions across departments and with provincial partners. Furthermore, Public Safety Canada is tasked with facilitating the assessment and processing of Requests for Federal Assistance (RFAs), ensuring that military support via the CAF is considered only when appropriate and necessary. This coordination is guided by the National Emergency Response System, embedded within the broader Public Safety Canada Protocol.[138]

The tiered approach ensures that emergencies are managed at the most immediate level before escalating to higher authorities. Within the federal system, the Department of Public Safety then submits a request to the Department of National Defence via the Ministers, which then dispatches the military to assist with the emergency.[138]

2.5.2. Laws and Conventions Governing Civil-Military Collaboration in Canada

In Canada, provincial governments have Emergency Acts that allow them to request assistance from the federal government. Emergency Management Act SC 2007, c. 15 section 2(b) states that

the Canadian Armed forces can respond to civil emergencies under the purview of the National Defence Act.[143]

According to the National Emergency Response System, federal departments are responsible for planning emergency responses, with the roles of each department being defined in the Federal Emergency Response Plan. Of note, there are provisions for addressing potential constraints; for example, it allows a department to seek assistance from other departments if it fails or if its resources become exhausted during the time of crisis.[19]

When a nature-triggered emergency exceeds the responsive capacity of provincial or territorial authorities, they can request assistance from the CAF under Operation LENTUS.[138] CAF members can undertake a range of activities, including filling, distributing, and placing sandbags; assisting with fire suppression; evacuating and transporting people; delivering aid to remote communities; checking on residents; and assessing infrastructure.[138]

Each province in Canada maintains its own legislative and operational framework for emergency management, outlining the specific protocols for requesting federal assistance when local capacity is exceeded. While these systems are broadly aligned with federal coordination mechanisms, the details vary by province, creating inconsistencies in how Requests for Assistance (RFAs) are processed. For example, The Manitoba Emergency Plan 2018 allows the provincial authorities to call for federal assistance when its responsive capacity is overwhelmed. For assistance from the Department of National Defence, the request for assistance should be made through the provincial Assistant Deputy Minister for Emergency Management and Public Safety.[23,144] In contrast, other provinces—such as Ontario or British Columbia—have their own designated emergency coordination centres and ministerial channels for escalating RFAs, often through their provincial emergency operations centres and intergovernmental affairs offices. This decentralized approach, while respecting provincial autonomy, can lead to variations in response speed, clarity of authority, and integration with federal actors like the Department of National Defence (DND).

2.5.3. Institutional Structure of Civil-Military Coordination in Domestic Disaster Response in the United States

In the United States, the decision to deploy the military during a domestic disaster can be made by the President of the United States or the Governor of the State in question. National Guards are

controlled by the state governors The President (as Commander in Chief) has the authority and executive power to authorize the use of military forces in response to a disaster or emergency situation within the country.[78] Institutional structure of civil-military coordination in nature-triggered disaster response and involvement of military in domestic operations involves a chain of communication between the departments and authorities at different levels of government. When a disaster exceeds the capabilities of local and state authorities, they can request federal assistance. The request is typically made through the Governor of the affected state to the appropriate federal civilian agencies, namely to the Federal Emergency Management Agency (FEMA)i[78]

The distinct component in the institutional structure of Civil-Military Cooperation Domestic Disaster Response in the United States is the National Guard. The National Guard is a reserve component of the military with representatives in all of the services except the Marines, consisting of state-based units that can operate under either state or federal authority depending on activation status.[156,157] Under Title 32 of the United States Code (U.S.C.), which is part of the United States Code of federal law, the Governor of the state has control over the National Guard for state-level missions, including disaster response.[146] However, under Title 10, the President can federalize the National Guard, placing it under federal command and integrating it with active-duty military forces for large-scale disaster relief efforts often across several state jurisdictions.[146]

Upon receiving a formal request for assistance from a state governor, typically when a disaster exceeds state and local capabilities, federal agencies such as FEMA and the Department of Homeland Security, assess the situation and make recommendations to the President regarding the need for military involvement. They consider factors such as the nature and scale of the disaster, the resources required, and the potential benefits of military assistance. Based on the assessment and recommendations from federal agencies, the President decides on whether to authorize the deployment of military forces. This decision is based on interests such as public safety, national security, and the overall response required. If the President authorizes military involvement, the appropriate military commands receive the order and activate the necessary military assets and personnel.[78]

According to the U.S. Department of Defense (DoD) doctrine, military commanders may, under limited circumstances, provide immediate assistance to civil authorities in life-threatening emergencies when local resources are overwhelmed, through what is known as Immediate Response Authority (IRA).[78,147] Such provision of authority exists even without or prior to a

declaration under the Stafford Act[78]—officially titled the Robert T. Stafford Disaster Relief and Emergency Assistance Act—which is the primary federal law that governs how the federal government provides assistance to state and local governments during major disasters and emergencies. The purpose of such immediate action is to save lives, alleviate human suffering, or prevent significant property damage. Immediate response actions may include activities authorized under the Stafford Act,[78] such as rescue operations, evacuation efforts, emergency medical treatment, restoration of essential public services, debris removal, management of contaminated areas, distribution of food and essential supplies, and provision of interim emergency communications.[78] These actions can be initiated at the request of civil authorities. Notably, the doctrine does not mandate a request from a state or local officials for the Department of Defense to take action. However, as noted earlier, it emphasizes that the Department of Defense components should not assume the functions of civil government unless absolutely necessary and on a temporary basis, specifically under conditions of "immediate response".[147,148] Any commander who performs such functions is expected to facilitate the reestablishment of civil responsibility as soon as feasible.[78,149]

It is important to note that the Posse Comitatus Act,[78] a federal law, restricts the use of military forces, especially regular forces, for law enforcement purposes within the country. However, provisions for exceptions exist for specific circumstances, including disaster response and support to civil authorities which allows for the National Guard.[78]

2.5.4. Legal and Administrative Framework in the United States for Military Involvement in Domestic Response to Disasters

Military assistance to civil authorities is provided via the Defense Support of Civilian Authorities (DSCA) process, which is governed by the US Department of Defense's policies and doctrine. In its 2005 Strategy for Homeland Defense and Civil Support, the US Department of Defense (DoD) defines defense support of civil authorities as "DoD support, including Federal military forces, the Department's career civilian and contractor personnel, and DoD agency and component assets, for domestic emergencies and for designated law enforcement and other activities."[150] The National Preparedness Goal calls for, "A secure and resilient Nation with the capabilities required across the whole community to prevent, protect against, mitigate, respond to, and recover from the threats and hazards that pose the greatest risk."[79]

The National Response Framework (NRF) is a universal framework for responses to all types of incidents, from natural to anthropogenic, that is governed by five core principles: (1) engaged partnership; (2) tiered response; (3) scalable, flexible, and adaptable operational capabilities; (4) unity of effort through unified command; and (5) readiness to act.[77]

DSCA is implemented by following the NRF in responding to disasters. When local and state government resources are overwhelmed during an incident, federal assistance can be requested via a basic Request for Assistance (RFA) to the DoD.[147] The Robert T. Stafford Disaster Relief and Emergency Assistance Act is the legal authority governing relief for natural and anthropogenic disasters.[78,147,151] The Economy Act empowers the federal authorities to order goods and/or services from other federal agencies under the condition that these goods or services not be provided by a commercial enterprise as per the contract or convenience.[148] The Military Support to Civilian Law Enforcement Agencies provisions is then applied to specific circumstances wherein civilian law enforcement officials and agencies might require military resources, including facilities, training, maintenance, and/or equipment.[78,147,151]

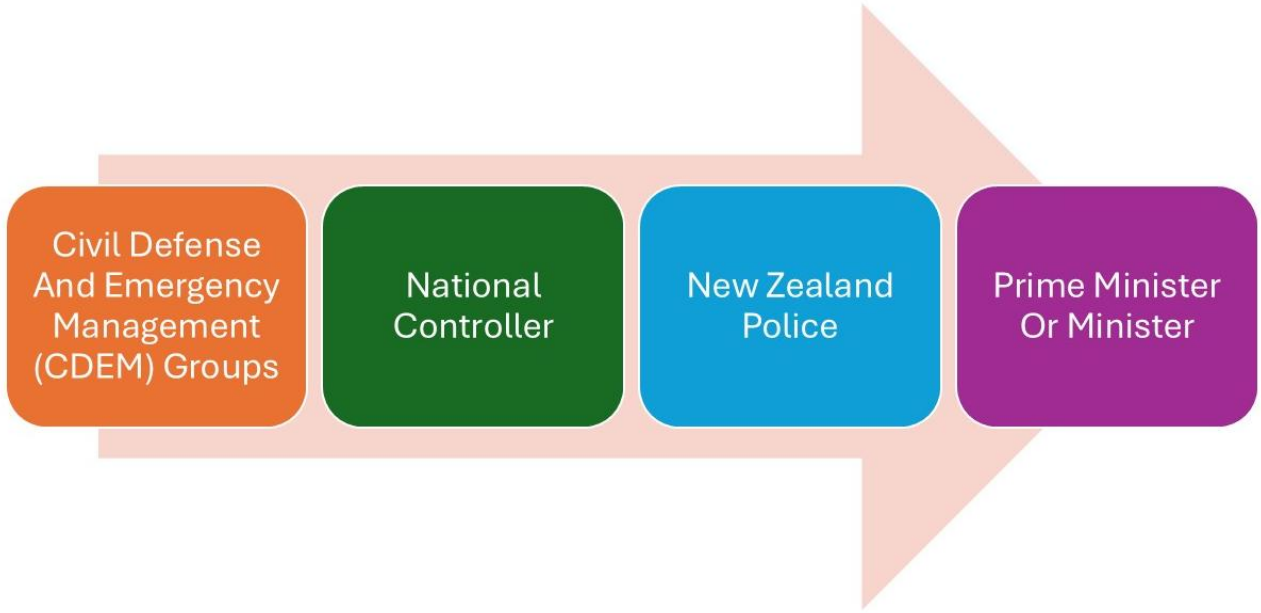
A notable example occurred during Hurricane Katrina in 2005, when the Governor of Louisiana formally requested federal military assistance after state and local resources were overwhelmed. In response, DSCA was triggered, and Title 10 federal forces were deployed alongside National Guard troops under Title 32, but with strict limitations on law enforcement roles for active-duty troops, in accordance with the Posse Comitatus Act. Their primary roles included logistics, evacuation support, and infrastructure repair, while law enforcement duties remained with National Guard troops under state control.[150,155,156]

2.5.5. Institutional Structure of Civil-Military Cooperation in Domestic Disaster Response in New Zealand

In New Zealand, requests for assistance from the New Zealand Defence Force (NZDF) are made through the National Controller's office during the response phase of any emergency. The National Controller reports to the federal minister and coordinates with New Zealand police personnel.[34] According to the Defence Act of 1990, assistance from the NZDF can be requested by the Commissioner of Police or a Deputy Commissioner of Police,[80] but they are required to provide the pertinent information to the Prime Minister or, if the Prime Minister is unavailable, the next

most senior available minister.[80] Figure 2.2. details the scope and objectives of the military's involvement, as well as the period of deployment.[80] After a permit is issued at the ministerial level, the Chief of Defence Force can mobilize the NZDF. While the NZDF is deployed under the command of the military, the units assigned to the response are directed by the lead agencies in charge of the effort.[80]

Figure 2.2. New Zealand's institutional structure of civil and military coordination in domestic operations during natural disasters[34,80]



2.5.6. Legal and Administrative Framework in New Zealand for Military Involvement in Domestic Response to Disasters

In New Zealand, the Defence Act 1990[80] serves as the backbone for civil-military cooperation in nature-triggered disaster response, as it clearly outlines the boundaries of the New Zealand Defence Force's (NZDF) involvement and the processes involved in engaging it. Conversely, the National Civil Defence Emergency Management Plan Order 2015 and the New Zealand Defence Doctrine outline the roles and responsibilities of NZDF during emergencies. The New Zealand Defence Doctrine serves as a guiding framework for the NZDF in its operations and decision-making processes, outlining the fundamental principles, concepts, and strategies that shape the NZDF's approach to national defence and security. Notably, the Defence Doctrine (fourth edition) specifies the NZDF's role in domestic operations, specifically during emergencies, to support civil

powers or public service. Providing assistance with emergency relief efforts is one of the security events stipulated in the Defence Doctrine, particularly when such efforts are matters of national survival.[152]

The Defence Act 1990 makes specific provisions regulating the use of the NZDF for public service or to assist civil authorities. For instance, it allows for the military to perform public services or assist during emergencies, both domestically and internationally; however, involvement in disputes requires written authorization from the minister, specifying which military unit is required and the nature of the service to be performed.[80] The military can assist civil power under certain conditions. Authority from the Prime Minister or another authorized minister is required when an emergency is imminent and when the police require assistance in addressing threats to life, property, or public safety. In these instances, the military acts at the request of the police and is empowered to exercise necessary constabulary powers, with the same civil and criminal liability protections as constables.[80] Any authority granted by the Minister of Defence or the Prime Minister/other minister must be promptly communicated to the House of Representatives, along with the reasons,[80] which provides parliamentary oversight by reviewing the decision and its justification. This authority expires after fourteen days unless extended by the House or, if Parliament is dissolved or has expired, by a Proclamation approved by the Governor-General in the Executive Council.[80] These provisions ensure that the NZDF's involvement in public services and assisting civil power is governed by clear guidelines and subject to appropriate scrutiny and oversight.

The NZDF's role in domestic emergency response is determined by the National Civil Defence Emergency Management Plan Order 2015.[34] During a crisis, NZDF personnel are not allowed to exercise New Zealand police powers, but they may do so if a New Zealand police department makes a request according to the existing laws or if it is to save lives.[34]

The role of the NZDF during emergencies is divided into two phases: i) readiness, and ii) response.[34] In respect of the role of the NZDF during readiness, the NZDF prioritizes emergency response preparedness via various measures, including business continuity and contingency plans. It conducts internal training and national exercises and collaborates with the National Emergency Management Agency (NEMA) and Civil Defence Emergency Management (CDEM) with respect to planning and training. These efforts ensure the NZDF's effective emergency response capability within New Zealand.[34]

Regarding the role of the NZDF during response, during emergencies, the Force implements several measures to ensure effective coordination and support. Liaison officers are assigned to the National Crisis Management Centre (NCMC), Emergency Coordination Centre (ECC), and potentially local Emergency Operations Centres (EOCs). These officers provide advice and updates on NZDF support operations but are not authorized to accept tasks. The NZDF maintains forces ready for regional and national deployment, including land, air, and sea assets. Coordination of these assets occurs at either the local (ECC) or national level (NCMC), depending on the nature and scale of the emergency. Requests for NZDF support beyond the local levels must be initiated by the Civil Defence Emergency Management (CDEM) groups through the National Controller. These measures ensure NZDF's effective alignment with crisis management centers and relevant authorities during emergencies.[34]

2.6. Synthesis, Discussion and Implications

This study examines the legal and institutional frameworks governing military involvement in domestic disaster response in Canada, the Unite States, and New Zealand, highlighting key themes including legal structures, response mechanisms, strengths, challenges, and unique aspects of each system. The findings reveal that while all three countries recognize the military as a crucial component in domestic disaster response, the processes, decision-making structures, and oversight mechanisms differ based on their history of institutional evolution, governance models and legal traditions.

A synthesis of the key comparative aspects of military engagement in domestic disasters and emergencies between the selected countries is presented in Table 2.1.

Table 2.1. Comparison of Military Engagement in Domestic Disaster Response in Canada, the USA, and New Zealand

Theme	Canada	USA	New Zealand
Legal Framework	Governed by the Emergency Management Act[19] and National Defence Act.[75] Military assistance is	Governed by the Stafford Act, [78] National Response Framework,[77] and DSCA doctrine.[147] Military support	Governed by the Defence Act 1990[80] and the National Civil Defence Emergency

Theme	Canada	USA	New Zealand
	deployed under Operation LENTUS[22] when requested by provincial/territorial governments.	follows strict legal constraints, such as the Posse Comitatus Act, [78] which prevents active-duty military from performing law enforcement duties.	Management Plan.[34] Military assistance is approved directly by the Prime Minister or an authorized minister, ensuring quick decision-making.[80]
Primary Mechanism	Tiered approval system: Municipal authorities handle emergencies first, escalating to provincial and federal levels if overwhelmed.[138] CAF is deployed only as a "last resort".[47,73]	Dual-tier system: The National Guard operates under state control (Title 32) but can be federalized (Title 10) for large-scale disasters.[146]Federal military support is provided via FEMA and DSCA.[77,153]	Centralized approval system: The National Controller coordinates with the Prime Minister's Office for military deployment.[80]
Key Features	CAF is deployed only when all civilian capacities are exhausted.[138] There is no National Guard equivalent, meaning reliance is solely on federal military forces.	The National Guard acts as an intermediary force,[154] reducing reliance on federal military forces. The Posse Comitatus Act[78] restricts active-duty military from law enforcement roles.	The NZDF is integrated into national disaster planning, allowing for proactive engagement rather than waiting for formal requests.[34]
Strengths	Strong provincial autonomy ensures that local governments handle disasters before seeking federal assistance. Civilian	Flexible response options due to the National Guard's state and federal roles. Governors can deploy forces	Faster decision-making due to centralized approval. The parliamentary review process ensures

Theme	Canada	USA	New Zealand
	control over the military is well established.	independently before escalating to federal levels.	transparency in military deployment.
Challenges	Bureaucratic delays in requesting CAF assistance due to multi-tiered approval. Lack of an intermediate military response force.	Coordination challenges between state-controlled National Guard and federal military forces during large-scale disasters.	Over-centralization risk—strong national control could slow local response if national decision-makers are unavailable.
Unique Aspects	Unlike the U.S. Posse Comitatus Act, Canada has no single statute restricting domestic military roles, but the National Defence Act requires formal authorization for any CAF deployment, especially involving force, ensuring strict civilian oversight	Posse Comitatus Act[78] restricts active-duty military from law enforcement roles. The dual-status of the National Guard allows flexibility in deployment.	Parliamentary review process mandates accountability for military involvement in domestic disaster response.[80]
Common Themes	Civilian control over military deployment, multi-agency coordination; Military as a Support Force, Not a Primary Responder	Civilian control over military deployment, multi-agency coordination; Military as a Support Force, Not a Primary Responder	Civilian control over military deployment, multi-agency coordination; Military as a Support Force, not a Primary Responder

Canada's legal framework for disaster response by the CAF is governed by the Emergency Management Act[19] and the National Defence Act,[75] allowing the CAF to be deployed when provincial or territorial authorities request for federal assistance.[138] The primary mechanism follows a tiered approach, where emergencies are first handled at the municipal level, escalating to the provincial level, and only reaching the federal level if local capacities are overwhelmed.[17] Military involvement operates under the "last resort" principle, meaning that CAF is called in only when all civilian resources are exhausted.[47,73]

A key strength of Canada's system is its clear division of responsibility, ensuring that lower levels of government manage and respond to crises before any federal intervention. However, a major challenge is the bureaucratic delays caused by the multi-layered approval system, which often slows down military response time in rapidly developing disasters. The sequential nature of this process, involving municipal escalation to provincial emergency management and then federal coordination through Public Safety Canada and the Department of National Defence, inherently lacks the speed and flexibility often needed during acute disasters. Although the process is legally clear, its operational execution may still result in temporal inefficiencies that can hinder rapid military mobilization. Unlike the United States, Canada does not have a National Guard[154] equivalent in terms of dual-authority deployment. While Canada does maintain a Reserve Force, its members operate solely under federal command and cannot be independently activated by provincial governments—unlike the US National Guard, which can be mobilized by state governors under Title 32 for rapid disaster response without federal approval. A distinct aspect of Canada's system is its reliance on the Public Safety Canada Protocol, which coordinates emergency response across different government levels that is when assistance is needed across several provinces. A common theme Canada shares with the Unites States and New Zealand is the emphasis on civilian control over military deployment, ensuring that military forces support but do not replace civilian authorities in disaster management.

The US legal framework for military disaster response is a complex one, involving multiple laws such as the Stafford Act, [78] the National Response Framework,[77] and the Defense Support of Civil Authorities (DSCA) doctrine.[147] The primary mechanism follows a tiered approach, where local and state authorities handle emergencies before requesting federal support, typically through the Federal Emergency Management Agency (FEMA)[i]. [78] A key feature that distinguishes

the United States from Canada and New Zealand is the dual authority structure of the National Guard.[155] Under Title 32, the National Guard remains under state control, allowing state governors to deploy the Guard for disaster response.[146] However, under Title 10, the US President can federalize the National Guard, integrating it with active-duty forces.[146] This flexibility is a strength, enabling rapid deployment at the state level without a federal approval.

However, the task of coordinating the state and federal forces often becomes complicated, particularly if command structures are unclear during large-scale disasters. A distinctive aspect of the US system is the Posse Comitatus Act,[153] which restricts active-duty military (it is to restrict regular forces. National Guard are reserve forces) from engaging in domestic law enforcement, ensuring a strong separation between military and civilian roles. A common theme that the United States shares with Canada and New Zealand is the reliance on a structured, multi-agency approach to disaster response, integrating military and civilian capabilities.

New Zealand's legal framework for military engagement in disaster response is defined by the Defence Act 1990[80] and the National Civil Defence Emergency Management Plan.[34] Unlike Canada and the Unites States, New Zealand operates under a unitary system,[156] meaning that disaster response decisions are made at the national level rather than by states or provinces. The primary mechanism for deploying the New Zealand Defence Force (NZDF) involves direct approval from the Prime Minister or another senior minister, with oversight from the National Controller.[80] This centralized approach is a strength, as it allows for faster decision-making compared to the federal systems of Canada and the USA.

The high degree of centralization in New Zealand's system of military engagement in domestic disasters has resulted in an over-reliance on national authorities, often slowing down response efforts in local emergencies. A unique aspect of New Zealand's model is its parliamentary review process, which ensures transparency and accountability in military deployments during domestic emergencies. However, this rigorous oversight mechanism, while valuable for governance, may also introduce delays in urgent response scenarios where rapid decision-making is critical. A common theme New Zealand shares with Canada and the United States is its emphasis on civilian control over military operations, with offers legal and institutional safeguards to prevent military overreach during disaster response.

2.7. Lessons Learned and Implications for Future Direction

The comparative analysis of Canada, the United States, and New Zealand reveals key insights into military engagement in domestic disaster response, highlighting areas where Canada can improve its policy framework, operational efficiency, and legal oversight. While Canada benefits from structured governance and strong civilian oversight, the findings of the present study reveal opportunities for further improvement in response speed, interagency coordination, and institutional preparedness for future domestic disasters. Four specific areas of improvement have been identified, as follows:

2.7.1. Streamlining Military Deployment for Rapid Response:

A key challenge in Canada's system is the multi-tiered approval process, which ensures civilian oversight but can cause delays in mobilizing the CAF. Unlike New Zealand's centralized model, where ministerial approval for military deployment occurs directly at the national level through a streamlined process, Canada's federal structure requires intergovernmental coordination—provincial requests must pass through multiple levels, including Public Safety Canada, before the Minister of National Defence can authorize deployment. This layered approval system may reduce responsiveness in time-sensitive scenarios. The US system provides flexibility by allowing National Guard activation at the state level, reducing dependency on federal forces. To accelerate response time, Canadian institutions can develop provisions for implementing pre-authorized military engagement thresholds for specific disaster scenarios. A fast-track approval process at the provincial level will likely improve response efficiency while maintaining federal oversight.

2.7.2. Establishing an Intermediate Disaster Response Force

Unlike the US National Guard, which serves as a state-controlled rapid response force for domestic emergencies, Canada relies on the CAF as a unified federal institution. While Canada has a Reserve Force component, it differs significantly from the National Guard in terms of structure, governance, and deployment authority. The U.S. National Guard operates under both state and federal command (Title 32 and Title 10), allowing state governors to activate it swiftly during crises. In contrast, Canada's Reserve Force is federally controlled and cannot be independently mobilized by provincial governments, which can lead to resource strain and potential delays in domestic deployment. New Zealand integrates military resources into civilian disaster planning,

ensuring readiness before a crisis occurs. The Canadian system can consider creating a National Disaster Response Reserve Unit, composed of CAF Reserves, trained civilian responders, and emergency management specialists. This unit could be deployed at the provincial level, providing an intermediate response force before engaging in the CAF.

2.7.3. Enhancing Military-Civilian Coordination and Integration

The US model benefits from FEMA's integration with military assets. The New Zealand system follows a proactive planning model where the military is directly embedded in civilian-led disaster response frameworks. The approach of the Canadian system remains more reactive-oriented, where CAF is deployed upon request rather than fully integrated into emergency planning at all levels. In this respect, an integrated system of ready-to-go intermediary force can address the inefficiencies of a reactive-oriented approach. On the other hand, expanding joint training programs between CAF, Public Safety Canada, provincial emergency agencies, and local responders, ensuring CAF participation in national and regional disaster preparedness exercises, can enhance effectiveness and efficiencies in collaboration. While existing joint exercises like SAREX[157] and Operation Nanook[158] represent valuable interagency collaboration, they are not universally comprehensive. These exercises tend to focus on specific scenarios—such as Arctic operations or search and rescue—and may not routinely address the full spectrum of hazards facing different regions across Canada, including climate-induced events like wildfires, urban flooding, or complex cascading disasters. Expanding the scope and regional customization of such training could strengthen national preparedness.

2.7.4. Strengthening Civilian Oversight with Clear Legal Constraints

Unlike the U.S. Posse Comitatus Act,[78] which strictly limits military engagement in law enforcement, Canada does not have an equivalent standalone statute, but legal constraints are embedded within the National Defence Act and the Emergency Management framework. Specifically, Canadian Armed Forces (CAF) personnel do not have general law enforcement authority. Only under exceptional circumstances—such as a declared insurrection or a state of emergency under the Emergencies Act[19]—can select military members be granted peace officer powers, and even then, their roles are tightly regulated and temporary. New Zealand enforces parliamentary oversight to review military deployments, ensuring transparency and accountability. Here, setting up formal legal constraints on military involvement in domestic operations to

maintain places civil-military boundaries. Mandating parliamentary review of military deployments in non-defence-related emergencies in Canada, similar to New Zealand's oversight model, can considerably improve the civil institutions' oversight of the deployment of Military

2.8. Conclusion

This study analyzes the institutional and legal frameworks governing civil-military cooperation in there selected developed nations, namely Canada, the Unites States, and New Zealand, to highlight the critical roles played by military forces in domestic disaster response. While all three countries recognize the military as a vital resource in disaster management, their governance structures, response mechanisms, and legal oversight have some common characteristics as well as they vary significantly in some areas.

Canada's tiered approval system ensures civilian control, but bureaucratic delays can slow CAF deployment. One example is during the 2022 hurricane Fiona, the request for assistance was made on 25th of September , 2022 approved the same day and CAF appeared at the affected areas on 26th of September, 2022 and started assessment on 27th of September[22] where during a disaster time is equivalent to life. In comparison, the US National Guard model offers greater flexibility, while New Zealand's centralized system facilitates rapid decision-making, but risks over-centralization. The findings suggest that while respecting provincial jurisdiction, Canada could explore options such as streamlining intergovernmental coordination protocols, enhancing the readiness of the Reserve Force as an intermediate response option, and expanding interagency collaboration frameworks. These measures would strengthen disaster response capacity without undermining constitutional boundaries or the principle of civilian primacy in domestic emergency management.

In future, strengthening legal constraints, integrating technology in disaster forecasting, and incorporating climate resilience strategies will be essential for improving Canada's military disaster response framework. By adopting best practices from the United States and New Zealand, Canada can build a more agile, efficient, and accountable civil-military cooperation model, ensuring that military engagement remains a strategic supplement rather than a primary disaster response mechanism.

Chapter 3: Challenges in Collaborative Domestic Emergency Management in Canada: Stakeholders' Perspectives on the Role of Military

3.1. Introduction

In this study, "collaboration" refers to structured, ongoing partnerships between civil and military institutions aimed at reducing, responding to, and recovering from nature-triggered disasters. Collaboration encompasses shared planning, synchronized operations, interoperable communication systems, and mutual respect for institutional mandates. Some scholars argue that collaboration must go beyond temporary cooperation in times of crisis and develop into long-term institutional relationships supported by regular training, clearly defined roles, and sustained cross-sector engagement.[159]

In this study, stakeholder perspectives on the CAF's role in responding to nature-triggered extreme events, particularly in the context of climate change was documented and analyzed. This work had three main objectives: i) to highlight issues relating to intergovernmental coordination by examining governing institutional and command structures in Canada; ii) to analyze inter-organizational (state and non-state actors and institutions) and stakeholder coordination vis-à-vis domestic emergency response; and iii) to determine barriers and opportunities for improving collaboration and the effectiveness of domestic emergency response, particularly large-scale responses.

This chapter outlines the qualitative methods employed in the present study to explore the complexities of civil-military coordination in Canada's domestic disaster response. The study adopted an exploratory empirical research design, which is well-suited for investigating under-researched social phenomena in real-world contexts.[67,160] Two primary data collection methods were utilized: Key Informant Interviews (KIIs) and a Focus Group Discussion (FGD). In total, 26 KIIs were conducted with participants purposively selected from diverse sectors, including the Canadian Armed Forces (CAF; n=8), federal, provincial, and municipal emergency management officials (n=8), academic experts (n=6), and non-governmental organization (NGO) representatives (n=4). KIIs are particularly effective for gathering detailed, context-rich insights from individuals with specialized knowledge and direct operational experience.[161,162] Unlike the FGD, which facilitated interactive discussions among ten participants from government, military, academia, and NGOs to uncover shared understandings and intergroup dynamics,[63] the KIIs

provided individualized accounts of institutional structures, operational practices, coordination challenges, and perceived barriers to effective collaboration. This methodological combination enhanced the credibility and rigor of the study by triangulating data sources[62] and enabling a comprehensive understanding of inter-organizational dynamics within Canada's emergency management landscape.

3.1.1. Focus Group Discussion

The FGD comprised ten participants—a number consistent with qualitative best practices that prioritize depth of insight over statistical generalizability.[163] They included representatives from Public Safety Canada and Health Canada at the federal level; provincial emergency operation directors from British Columbia and Alberta; a municipal emergency coordinator; two CAF members (one active-duty officer and one reservist); and academic experts from York and Brandon universities. Additionally, the group included senior managers from the Canadian Red Cross and Team Rubicon Canada (Table 3.1). These individuals brought varied professional experience, ranging from field deployments and operational logistics to disaster policy analysis and humanitarian coordination.

Table 3.1. Focus Group Discussion (FGD) participant information

Sector	Participant Affiliations
Federal Government	Public Safety Canada, Department of National Defence (DND), Health Canada
Provincial Government	Provincial Emergency Management Offices from Ontario, British Columbia, Alberta, Manitoba
Municipal Government	Local emergency services departments and municipal emergency managers from cities in British Columbia and Manitoba
Military	Active-duty officers and reservists from the Canadian Armed Forces with domestic deployment experience

Sector	Participant Affiliations
Non-Governmental Orgs	Canadian Red Cross, Team Rubicon Canada, local volunteer emergency response organizations
Academia	York University, Brandon University, NYU—researchers and faculty in emergency management and public safety

The 90-minute session was conducted virtually using a secure video-conferencing platform. While a structured discussion guide aligning with the study's interview themes was used, participants were also encouraged to share personal experiences, respond to one another's insights, and reflect critically on the successes and tensions encountered during recent disaster events. Informed consent was obtained from everyone, and the discussion was audio-recorded and transcribed verbatim for analysis.

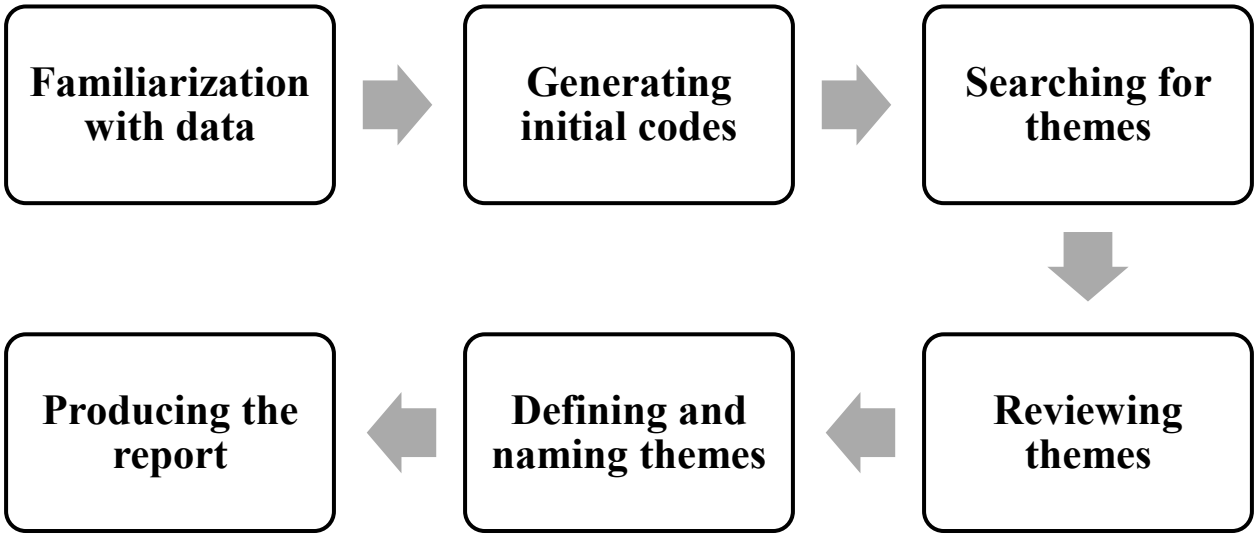
To ensure relevance and expertise, participants were purposively selected based on their direct operational involvement, policy knowledge, or institutional oversight of disaster response. While not all individuals held senior executive rank, each played a substantive role within their respective organizations—whether in federal departments (e.g., Public Safety Canada), provincial emergency operations, municipal coordination, or field-level military and NGO deployment. Their inclusion was intended to balance strategic insight with practical experience across civil-military and interagency response contexts.

3.1.2. Data Analysis

The qualitative data were analyzed thematically using NVivo software, as this platform allows large volumes of textual data to be coded, organized, and interpreted in a structured manner.[164] The use of NVivo's coding matrices and hierarchical visualizations enhanced the transparency of the analysis process and ensured the findings were grounded in the participants' responses, while also maintaining analytical rigor.[165] Thematic analysis is particularly effective for identifying patterns within qualitative data,[66] and for examining how interagency coordination challenges shape disaster response efforts in Canada.

A six-step framework based on Braun and Clarke's model,[66] was formulated and applied to the coding process (Figure 3.1). The steps in this framework were as follows: i) familiarization with data—reviewing transcripts and making initial observations; ii) generating initial codes—identifying key concepts and recurring themes; iii) searching for themes—grouping related codes into overarching categories; iv) reviewing themes—refining and validating thematic relationships; v) defining and naming themes—clarifying the significance of each theme; and vi) producing the report—synthesizing findings into a structured analysis. This process yielded three key themes: the CAF's logistical strengths and limitations, gaps in intergovernmental coordination, and the role of stakeholder collaboration in shaping emergency response outcomes.

Figure 3.1. Stepwise coding process of the study[66]



To guide the analysis, qualitative data was coded thematically using a combination of deductive and inductive approaches. Deductive themes—such as Coordination Dynamics with Other Stakeholders and NGOs, Effectiveness and Challenges of Current Military Engagement, Perspectives on National Disaster Response and Institutional Changes, Lessons Learned and Recommendations for Improvement, and Broader Implications and Future Directions—were initially shaped by the research objectives and informed by the literature on civil-military cooperation and disaster governance. These themes provided a structured framework to guide the initial stages of data analysis. In contrast, inductive themes—such as Bureaucratic Delays, Misaligned Organizational Structures, Coordination Bottlenecks Across Jurisdictions,

Misconceptions and Public Perception, Manpower Shortages, Inadequacy of Current Structures and Systems, and Local Capacity and Responsiveness—emerged organically from participants' narratives during the key informant interviews and FGD deliberations. After iterative rounds of coding and thematic refinement, three dominant themes were selected based on their prominence across transcripts and their relevance to the study's central questions: i) Institutional and Command Structure of the State; ii) Issues of Intergovernmental Coordination**,** Stakeholders and Inter-Organizational Coordination; and iii) Barriers, Opportunities, and Lessons Learned about Effectiveness and Improved Collaboration**.**

3.2. Findings

3.2.1. Institutional and Command Structure of the State: Issues of Intergovernmental Coordination

Disaster response in Canada operates within a complex intergovernmental framework, requiring coordination between municipal, provincial, and federal agencies. Overall, the stakeholders felt that, while the CAF plays an increasingly vital role in emergency response, ambiguities in role definition, governance inefficiencies, and communication barriers create significant challenges for effective coordination between different levels of government. They further pointed out that the institutional structure guiding emergency response is frequently hindered by bureaucratic delays, fragmented decision-making processes, and inconsistent engagement between civilian and military agencies. The stakeholders consistently identified bureaucratic inefficiencies in various levels ,such as the municipality, EMO, Public Safety Canada, particularly the layered Request for Assistance (RFA) approval process and indirect communication channels, as major barriers to rapid disaster response. These issues are discussed in detail under Governance Gaps.

The stakeholders cited the lack of clarity regarding the CAF's role in domestic emergency management as a persistent issue in intergovernmental coordination. The military was originally established and structured to be a national defence force, but in recent decades, it has been increasingly called upon to support domestic disaster relief efforts. Participants consistently expressed concern that CAF deployments for domestic emergencies occur in the absence of a standardized engagement framework—that is, a clearly defined, nationally consistent set of protocols, timelines, and responsibilities governing how and when the CAF should be engaged,

coordinated with civilian agencies, and demobilized during disaster responses. This policy vacuum was seen as a source of uncertainty regarding activation conditions, interagency coordination responsibilities, and the operational scope of military assistance during disasters. The absence of a standard engagement protocol complicates the timely mobilization of military resources, particularly in situations where municipal and provincial response teams are already overwhelmed. This lack of clarity results in delays, confusion, and inconsistencies in decision making at the municipal and provincial levels. During one KII, a senior CAF officer acknowledged that operational clarity is often missing across agencies, stating that, "*I think it's adequate at our operational level. I think the main challenge is the understanding what the Canadian forces' role is in a domestic emergency, and different organizations across the country know this differently. Therefore, one of the things the Canadian forces is trying to do is outreach so that we could educate people on our role in a national emergency."*

Participants expressed concerns about the Canadian Armed Forces' limited capacity for sustained domestic disaster operations and noted significant training gaps for complex civilian emergencies. These issues are further elaborated in the Discussion section.

The KIIs and FGD results revealed that governance inefficiencies, and non-operational mechanisms, are a major barrier to effective intergovernmental coordination. While the participants felt the CAF's structural capacities and operational command frameworks (e.g., the deployment of liaison officers through Joint Operations Command) functioned adequately, they indicated that the overarching governance and decision-making processes remained underdeveloped. One senior government official underscored this distinction during their KII as follows: *"In terms of the internal structures—how Canadian Joint Operations Command pushes out different units under direct liaison authority and attaches them to the provinces—I think those structures are pretty sound. So, I'd say the lacking piece is more at the governance level than anything else."* This observation highlights the need to enhance institutional coordination frameworks, intergovernmental protocols, and strategic-level decision-making mechanisms that facilitate rapid, coherent, and integrated responses during domestic emergencies.

The participants expressed concerns about the CAF's limited capacity for sustained domestic disaster operations and noted significant training gaps for complex civilian emergencies.

In the KIIs and the FGD, the participants identified training gaps within military disaster response teams as a major issue. Several participants highlighted the CAF's limited preparedness for domestic emergencies, particularly in relation to its training and mandate. One academic participating in the FGD stated that, *"responding to disasters is not their primary purpose of CAF. Their primary purpose concerns defence, and this is sort of a sideline for them, although it's becoming more and more common to respond to domestic disasters. I think it will become more common for CAF's engagement in domestic response in the future. I think even their current training for disaster response might be insufficient."* Deficiencies in domestic emergency training limit the CAF's effectiveness in supporting civilian agencies. This lack of disaster-specific training is rooted in the CAF's traditional operational focus on defence and international peacekeeping missions, rather than domestic civilian support. Unlike police or fire services, military personnel are not routinely equipped with the logistical, psychosocial, and humanitarian coordination skills that complex disaster scenarios demand. Without institutional reforms to address these capacity gaps, military-civilian interoperability during emergencies will remain limited and ad hoc. The KII and FGD results suggest that joint military-civilian training exercises and pre-deployment disaster-response courses could improve coordination and streamline integration efforts during crises.

Misaligned expectations between municipal governments and the CAF were cited in the KIIs and FGD as a recurring coordination challenge. Municipal agencies often assume that the military can provide extensive logistical support, whereas the CAF operates under different types of resource constraints. As one municipal emergency planner pointed out, local governments often overestimate what the CAF can realistically deliver, especially under tight timelines: "Municipalities think that the military can provide way more things than the military actually can in time frames." Such misconceptions and unrealistic expectations often result in strained coordination and unmet operational assumptions during joint responses.

The participants further opined that the effectiveness of Canada's disaster response framework is limited by various structural, governance, and communication challenges. The absence of a formal national doctrine governing the CAF's role in domestic disaster response reflects the underlying constitutional and political dynamics within Canada's federal structure. Historically, the establishment of binding engagement policies has been hampered due to the provinces' jurisdiction over emergency management and political sensitivities around military

presence in civil affairs. However, the ad hoc nature of recent CAF deployments increases operational ambiguity, risks strategic overstretch, and strains intergovernmental relations. Comparative models, such as Australia's Defence Assistance to the Civil Community (DACC) policy, demonstrate that it is possible to codify military support roles within civilian-led frameworks without undermining local autonomy.[166] Canadian authorities would benefit from adopting a similar national policy that clearly outlines the conditions for military engagement, defines standardized request for assistance (RFA) protocols, and ensures balanced civilian-military coordination during domestic emergencies. To address these challenges, it will be necessary to strengthen governance mechanisms, invest in disaster-response training, and establish a unified interagency coordination system to ensure the rapid deployment of resources and an effective emergency response with real-time information sharing.

The findings of the KIIs and FGD show that intergovernmental coordination remains a critical challenge in disaster response, particularly with respect to the delays and inefficiencies resulting from differences in federal, provincial, and municipal emergency-management structures. Regarding the structural limitations across levels of government, one key informant—a senior emergency strategist—noted that resource coordination often breaks down when multiple jurisdictions are involved. He shared that, based on his experience, *"What often ends up happening is the province doesn't necessarily have the resources that are needed, or the federal government doesn't have the resources that are needed, or it takes too long to get those."* Given the complexities of coordinating resources across different levels of government, experts recommend harmonizing intergovernmental policies and establishing predefined resource-sharing agreements, as such measures could facilitate faster, more efficient disaster-response efforts by reducing the bureaucratic barriers currently impeding coordination.

3.2.2. Stakeholders and Inter-Organizational Coordination

Disaster response efforts require collaboration not only among the governmental agencies and military, but also with other non-governmental organizations (NGOs), community-based organizations, and private sector partners. Indeed, the bureaucratic complexities of multi-agency disaster response remain a major barrier to effective inter-organizational coordination. The participants cited the multi-tiered approval process for requesting military assistance as a major

obstacle to timely intervention. An FGD participant from a federal emergency management office explained that *"the request has to sort of go up, and then go to the top, then it goes across to a high-level military, and then rolls back down. I'm not sure if that is the most efficient way for it to happen."*

The participants also discussed cultural differences between military and civilian agencies, observing that non-governmental organizations (NGOs) remain under-integrated into formal disaster response frameworks. The findings highlighted significant cultural differences between military and civilian emergency management actors. The participants pointed out that military and civilian organizations operate under different command structures, decision-making styles, and communication cultures, which creates barriers to effective disaster-response collaboration. As one senior emergency management official reflected, "*They're talking different languages; they have different perspectives, they have different cultures that sometimes don't work well in disaster*." According to the participants, these cultural divergences hinder integrated planning and slow operational decision making during joint missions.

The participants further emphasized that, despite their critical roles in providing humanitarian assistance, non-governmental organizations (NGOs) are insufficiently integrated into formal emergency response frameworks. This was echoed by one humanitarian expert, who concurred that, "While NGOs, community-based organizations, and faith-based organizations are critical, they are not integrated into the system." The exclusion of these agencies creates inefficiencies in resource mobilization and gaps in service delivery during crises. These findings underscore the importance of formally embedding NGOs into emergency management structures through memoranda of understanding, shared training exercises, and strategic planning initiatives.

Resource constraints and misaligned municipal, provincial, and military response expectations further complicate inter-organizational coordination. The findings indicated significant gaps between agencies with respect to expectations about which resources are available and who should provide them. In the KIIs, several participants described a disconnect in expectations between the military and municipal governments regarding each other's capabilities. As one municipal emergency planner explained, *"The military thinks that Rural Municipalities (RM)s are more prepared than they are, and municipalities think that the military can provide way more things*

than they actually can." These communication barriers are underpinned by structural differences between military and civilian command models. The CAF's hierarchical, centralized communication system contrasts sharply with the decentralized, horizontally networked communication patterns of municipal emergency services. Without interoperable protocols and shared information platforms, coordination will remain reactive, fragmented, and vulnerable to delays during critical response phases. These discrepancies may lead to inefficiencies in planning and operations, as emergency response agencies may overestimate the capabilities of partner organizations, only to discover resource shortages at critical moments.

Another major challenge in stakeholder collaboration is the lack of clarity and preparedness in military-civilian coordination efforts. The CAF often plays a key role in disaster relief, yet differences in command structures, decision-making processes, and organizational cultures create challenges to integrating military support with civilian-led response efforts. These divergent organizational cultures can hinder collaborative decision-making and complicate response efforts in high-pressure environments.

Failures in communication between civilian and military agencies during domestic emergencies typically stem from structural, technological[ii], and cultural differences. Structurally, the CAF's top-down command chain diverges from the decentralized operational approach of local emergency services, which can create delays in decision-making. Technologically, the absence of interoperable communication systems—such as shared emergency operations centers (EOCs) or unified digital platforms—hinders real-time situational awareness and information sharing. Culturally, the different operational lexicons employed by military and civilian actors can lead to misinterpretations and procedural friction. To address these challenges, it will be necessary to institutionalize integrated EOCs, deploy permanent liaison officers within municipal emergency centers, and develop standardized joint-communication protocols and training programs focused on cross-sector interoperability. In this respect, Public Safety Canada can take the lead to address this issue. In this respect Public safety can take the lead to solve the issues.

Several FGD and KII participants indicated that, while NGOs play a critical role in disaster-relief operations, they are often not fully integrated into the official emergency response system. The exclusion of non-governmental organizations (NGOs) from formal emergency response

structures was flagged as a significant gap in disaster coordination. Furthermore, the participants noted that the lack of structured engagement protocols for NGOs resulted in inefficiencies in resource mobilization, duplication of efforts, and gaps in service delivery. Given that NGOs often provide medical aid, shelter, and food during disasters, their exclusion from formal coordination mechanisms limits the overall effectiveness of response operations.

Stakeholder coordination in disaster response remains a complex and evolving challenge that requires better-defined collaboration frameworks, enhanced training programs, and improved communication strategies. The findings indicate that, while government agencies, military forces, and NGOs each play critical roles in emergency response, structural and procedural inefficiencies continue to hinder effective collaboration. To address these issues, it will be necessary to establish a more integrated approach to disaster-response planning, increase interagency training, and develop direct communication platforms that facilitate real-time coordination between stakeholders. By implementing these measures, governments and emergency management agencies can ensure a more cohesive, timely, and efficient disaster-response system that leverages the full capabilities of all involved organizations.

3.2.3. Barriers and Opportunities for Better Effectiveness and Improved Collaboration

Disaster-response efforts in Canada are shaped by a complex set of institutional, operational, and logistical factors that influence coordination and effectiveness. The participants in the FGD and KIIs said that significant barriers continue to impact intergovernmental disaster-response efforts, particularly in relation to resource allocation, bureaucratic inefficiencies, and the misalignment of roles between military and civilian agencies. However, despite these challenges, the participants identified key opportunities for improvement, such as strengthening coordination frameworks, improving training programs, and investing in sustainable emergency response capacities at the municipal and provincial levels. The lessons learned from recent disaster responses highlight the need for a more integrated, proactive, and strategic approach to disaster management.

While the military is frequently called upon to assist in domestic disaster-response efforts, the CAF is not structured to operate as a permanent emergency response unit. Several participants

from the federal government expressed concerns about the sustainability of the CAF's growing role in domestic disaster response, noting that strong public trust in the CAF puts political pressure on decision makers to request military assistance during domestic emergencies. The participants felt this dynamic could potentially increase reliance on military resources at the expense of building sustainable civilian disaster-response capacities. In addition, the continual diversion of CAF resources to domestic crises risks compromising its ability to fulfill its core defence mission.

The participants also emphasized the deep-rooted bureaucratic inefficiencies inherent to Canada's decentralized governance model, pointing out how the need to obtain approval across municipal, provincial, and federal levels of government often delays the mobilization of critical resources. This layered approval process reflects the architecture of Canada's federal emergency management system, which prioritizes provincial autonomy. However, while legally coherent, this structure constrains operational flexibility during rapidly evolving disaster scenarios. Unlike federated systems, such as the United States' Stafford Act, which enables swift federal intervention following the declaration of an emergency, Canada's approach requires prior provincial escalation. Developing pre-authorized bilateral emergency support agreements could reduce procedural lag without undermining jurisdictional sovereignty. The participants observed that the urgency of disaster response often clashes with the slow pace of bureaucratic procedures. This concern was articulated by one participant from a provincial emergency management office as follows: *"the biggest challenge that we have is it's a time-consuming process, and usually, if we're at the point where we need help, we need that help sooner rather than later."* When disasters escalate rapidly, the need to wait for authorization to deploy military support can result in critical delays that hinder an effective response.

While the military plays a crucial role in disaster relief, the FGD participants felt that overreliance on the CAF for routine disaster response reflects a systemic imbalance in investment wherein public trust in military efficiency inadvertently disincentivizes long-term investment in civilian emergency infrastructure. The participants warned that, without recalibrating investment priorities, municipal and provincial capacities would remain chronically underdeveloped, thereby reinforcing dependency cycles. Several participants expressed concern over the increasing reliance on the CAF as a substitute for under-resourced provincial and territorial emergency systems. One federal policy expert participant observed that, *"Over the past few years, the Canadian Armed*

Forces has become the default option. It's been called upon very often to fill in for provincial and territorial authorities in terms of emergency management." The participants acknowledged that CAF support is critical during crises, but some questioned the long-term sustainability of using military assets to compensate for systemic gaps in civilian emergency capacity. While military support is invaluable during large-scale disasters, it is not a long-term solution to systemic emergency management deficiencies. Instead, participants suggest that governments should focus on strengthening civilian-led disaster-response capacities to reduce over-reliance on CAF assistance.

Financial sustainability is another key concern in emergency management, as deploying military forces in response to disasters incurs significant economic costs. During their KII, one emergency operations coordinator noted that cost considerations are often overlooked in planning discussions: *"I think one of the challenges is that it does cost money. That's one of the biggest things, and I think that's something a lot of people forget about."* This insight highlights the importance of considering not only operational capacity but also long-term funding strategies when evaluating the sustainability of military deployment. Given the financial strain associated with repeated CAF deployments, participants recommend investing in long-term emergency preparedness programs at the municipal and provincial levels. By allocating resources to civilian-led response teams, governments can reduce their dependence on expensive military interventions while improving their overall response capabilities.

In both the FGD and KIIs, participants placed greater emphasis on the need to expand alternative civilian-led disaster-response capacities. In one KII, a provincial emergency management director discussed the strains placed on emergency response systems during large-scale disasters and emphasized the urgent need to enhance preparedness across jurisdictions as follows: *"I think that's what we need. At all levels of government, we need to do a better job of building more surge capacity to respond to events."* This sentiment reflects the broader recognition among emergency professionals that current capacity levels are insufficient, particularly as disasters continue to increase in frequency and scale.

Table 3.2 presents a synthesis of the key issues, solutions, and implementation strategies in civil-military disaster response in Canada. While significant barriers remain, the findings indicate

clear opportunities to improve disaster-response efforts through better training, enhanced interagency coordination, and the development of alternative response structures. Strengthening communication channels, clarifying role expectations, and streamlining approval processes are key steps toward building a more effective and sustainable disaster-response framework. By addressing these challenges, governments can enhance coordination efforts, improve resource allocation, and ensure that military and civilian agencies can respond to future emergencies more efficiently (Table 3.2).

Table 3.2. A synthesis of the key issues, solutions, and implementation strategies in civil-military disaster response in Canada

Problem / Issue	Remedies and Solutions	Tools / Instruments / Implementation Approaches
Lack of a clear national policy defining CAF's domestic role	Establish a formal engagement doctrine	National civil-military disaster policy; clear operational thresholds; integrated roles in federal emergency frameworks
Delayed CAF deployment due to bureaucratic layers	Streamline activation and approval processes	Bilateral agreements; emergency deployment protocols; delegated authority structures
Fragmented intergovernmental coordination	Improve collaboration between federal, provincial, and municipal levels	Joint Emergency Response Frameworks (JERFs); emergency liaison officers; harmonized provincial-federal SOPs
Communication breakdown between military and civilian responders	Create shared and direct communication platforms	Real-time digital systems (EOCs); liaison officer integration; unified terminology training
Cultural misalignment between CAF and civilian agencies	Institutionalize cross-sector relationship-building	Joint planning committees; embedded CAF officers in

		provincial EOCs; shared decision-making models
CAF lacks disaster-specific training	Implement joint and specialized training programs	Scenario-based exercises; pre-deployment civilian-led instruction; simulation training modeled after NIMS
Overdependence on CAF due to municipal/provincial capacity limitations	Strengthen civilian surge and local preparedness	Funding for municipal responders; regional stockpiles; community-based volunteer programs
Unsustainable financial strain from repeated CAF deployments	Rebalance disaster preparedness investment across government levels	Intergovernmental cost-sharing models; performance-based funding; inclusion of preparedness in long-term infrastructure budgets
NGOs and CBOs excluded from formal planning	Formally integrate civil society actors into emergency coordination	MOUs with NGOs; participation in provincial emergency planning boards; CBO training and simulation inclusion
Public misunderstanding of CAF's role in disaster scenarios	Make the public aware about CAF's disaster response capacity and limitations	Strategic communication plans; school-based awareness programs; inclusion in national disaster resilience campaigns
Lack of shared interagency training	Mandate recurring joint training between military, civilian, and NGO stakeholders	National training strategy; cross-sector simulation weeks; Public Safety Canada-led interagency curriculum
Variability in regional preparedness and response capacity	Conduct comparative analysis and standardization across provinces	Federal readiness audits; regional coordination benchmarks; adaptive planning frameworks

3.3. Discussion

This research sought to document stakeholders' perspectives and examine the complexities of civil-military coordination in Canadian emergency management, with a particular focus on the institutional, operational, and cultural dynamics that shape the CAF's domestic disaster-response role. I situate our findings within broader policy debates and comparative frameworks with the aim of informing strategies for enhancing resilience and inclusivity in emergency governance. A key insight emerging from this study relates to the growing normalization of CAF involvement in domestic disaster management, and the strategic risks this trend poses. While military deployments have proven essential in large-scale emergencies, the participants consistently stressed that the CAF is structurally and doctrinally ill-suited for sustained domestic roles. This finding is consistent with those of Botha[82] and Leuprecht[5] , who concludes that increased reliance on the military to fill civil response gaps reflects a broader failure to invest in resilient, civilian-led infrastructure. This structural dependency risk—where strong public trust in the CAF substitutes for structural reform in civilian emergency systems—risks long-term dependency and likely to erode institutional boundaries between defence and civil governance. It also diverts critical military resources from their primary strategic functions, including national defence and international obligations.

The findings of this study support longstanding critiques of Canada's decentralized emergency management architecture. The participants described the persistent delays and procedural complexity involved in mobilizing federal support, particularly through the Request for Assistance (RFA) mechanism. The participants' concerns about these bureaucratic barriers, which are rooted in Canada's federal structure, mirror Hudson's[4] and Etkin et al.'s[9] analyses of fragmented chains of command and interjurisdictional friction. Comparable frameworks such as Australia's Defence Assistance to the Civil Community (DACC)[166] and the US Stafford Act offer more agile alternatives with clearer activation thresholds and better federal-provincial coordination.[78] The Canadian case illustrates the limitations of current protocols and underscores the need for pre-authorized agreements and delegated authority models that balance provincial autonomy with federal responsiveness.

The results further reveal how divergent institutional cultures complicate civil-military interoperability. While the military operates under a centralized, command-driven system, civilian agencies prioritize decentralized, community-centered approaches. These contrasting logics create misalignments in communication, expectations, and decision-making—especially under high-pressure conditions. Several scholars (e.g., Michaud et al., 2019; Ratchev & Tagarev, 2018) have documented similar friction in other national contexts, arguing that such divides could be bridged via sustained interagency training and embedded liaison roles. Our findings support these recommendations, particularly the call for recurring, scenario-based joint exercises to build a shared operational language and mutual understanding. Taken together, the results of this study indicate a critical juncture in Canadian emergency management structures and strategies. As climate-related disasters become more frequent and intense, the strategic, operational, and ethical dimensions of military involvement must be re-evaluated.

3.3.1. Federalism and Coordination: Governance Gaps in Emergency Management

Canada's federal governance system makes military deployment for domestic operations very challenging. In this system, municipalities serve as the frontline responders,[82] they cannot directly request CAF assistance. Instead, RFAs must be escalated through provincial authorities, who may choose to deploy their own response assets first. Only when provincial capacities are deemed insufficient does the request advance to the federal level.[17] While provinces have their own emergency management resources and can lead responses, this multi-tiered process may delay CAF involvement during rapidly evolving crises. This multi-tiered approval process often causes delays, even during time-sensitive emergencies. Botha[82] describes the RFA process as an "interpretative dance" in which provinces often struggle to articulate effects-based needs. As a result, provinces' personnel or equipment requests may not align with the actual operational requirements. Ultimately, the procedural and cultural mismatches between civilian authorities and CAF command structures hinder timely activation and strain intergovernmental relationships.

The RFA system's rigidity, combined with the CAF's obligation to operate within defined governance and accountability limits, further constrain responsiveness. These coordination challenges mirror those observed in other federated systems. For example, in the European context, Ratchev and Tagarev[6] caution that fragmented mandates and unclear chains of command are

persistent risks in federal governance arrangements. The Canadian context reflects similar structural vulnerabilities—especially when localized readiness at the municipal level clashes with centralized federal decision-making protocols.

Beyond the governance gaps identified above, an important structural dimension relates to the role of Public Safety Canada in multi-jurisdictional emergency situations. Public Safety Canada is the federal department with a mandate to keep Canadians safe from a wide range of risks—including nature-triggered disasters, crime, terrorism, and national security threats—and to coordinate national responses through collaboration with federal partners such as the RCMP, Canada Border Services Agency (CBSA), and Canadian Security Intelligence Service (CSIS), Indigenous communities, provincial and territorial governments, municipalities, NGOs, and first responders[167–170] Under the Emergency Management Act (2007), it serves as the federal lead for emergency management—responsible for prevention, preparedness, response, recovery—and oversees the Request for Federal Assistance (RFA) process to trigger CAF's support[19].

Henstra[13] observes that in Canada's multilevel governance system, such responsibilities are embedded within broader portfolios and shared among multiple actors, which can diffuse responsibility, create ambiguity in authority, and strain coordination mechanisms—particularly when policy domains compete for political attention and resources. In the context of large-scale or multi-jurisdictional disasters, these dynamics can manifest as delays, inconsistent procedures, and gaps in operational capacity, ultimately undermining Public Safety Canada's ability to deliver efficient and coherent responses. Canadian federalism compounds these challenges: as Kuban et al. [171] highlight, large-scale disasters are inherently multi-organizational and multi-jurisdictional, requiring close intergovernmental cooperation; when such coordination falters, communication breakdowns, fragmented situational awareness, and procedural delays in resource allocation occur.

Existing literature offers evidence of cross-boundary events—such as wildfires spanning provincial borders or emergencies involving overlapping Indigenous and provincial jurisdictions—frequently expose operational gaps, including inconsistencies in the application of the Request for Federal Assistance (RFA) process.[172] Moreover, when provincial mutual aid agreements are not aligned with federal coordination mechanisms, integrating CAF's support into Public Safety Canada-led civilian operations becomes more complicated. [13,173] Without a more specialized, disaster-focused capacity building within Public Safety Canada, these structural

misalignments are likely to persist, limiting Canada's ability to mount timely and equitable responses to complex emergencies.

3.3.2. Cultural Friction and Institutional Asymmetries

The findings of this study highlight organizational cultural differences that often complicate collaboration between the CAF and civilian emergency agencies. For instance, the military operates through a top-down command structure, while civilian organizations tend to value collaboration, flexibility, and community involvement. These differing approaches can lead to miscommunication, conflicting priorities, and operational friction, especially during high-pressure situations like wildfires or floods. Fortunately, efforts are being made to bridge this divide. For example, liaison officers (LOs) and defense liaison officers (DLOs) are now stationed in emergency operations centres in several regions to help translate language and expectations across organizations. However, their presence remains inconsistent and highly dependent on local relationships and resources. As Hudson[4] and Fremis [130] note, unless these roles are regularly integrated, misunderstandings are likely to continue, especially when speed and coordination are critical.

Training is another area where gaps persist. Joint exercises involving military and civilian teams are still rare and often do not reflect the messy realities of disaster situations. Without regular, scenario-based training, people from different sectors will continue to struggle to understand each other's strengths, limits, and ways of working.

The military mindset itself can sometimes contradict civilian needs. As Thomas[128]and Botha[82] point out, CAF personnel are trained to respond to threats with a goal-oriented, problem-solving mentality; that is, they are trained to see disasters as enemies to be defeated. While this mentality can bring urgency and discipline to a crisis, it may not always align with the emotional and cultural needs of affected communities, particularly in long-term recovery or trauma-sensitive settings. Bridging these institutional cultures will require more than good intentions; it will demand ongoing relationship building, shared training, and a mutual commitment to understanding each other's roles.

3.3.3. Operational Preparedness and Training Gaps

Domestic disaster response requires a different set of skills than those emphasized in traditional combat operations. Tasks such as evacuation logistics, communication with civil authorities, and trauma-sensitive engagement with affected populations demand competencies that often fall outside the scope of conventional military training. Botha[82] describes instances wherein CAF personnel were given only "crash courses" in wildfire response—sometimes with as little as 24 hours of preparation—before being deployed to disaster zones; in contrast, the civilian specialists awaiting them in these areas often receive months or years of training. These examples highlight the limits of assuming that combat readiness automatically translates into domestic response capability. As Hudson[4] notes, the unique demands of domestic operations—including the use of heavy equipment in confined urban settings and culturally appropriate interactions with Indigenous communities—must be deliberately incorporated into CAF doctrine and preparedness models. On this issue, Etkin et al. [2] argue that, as climate-driven disasters become more frequent and severe, the need to address these training and capability gaps becomes more urgent.

Beyond technical readiness, there are human costs when unprepared personnel are dropped into high-stakes environments. Inadequate training not only places military responders at risk, but it can also undermine the quality of the support provided to vulnerable populations. Therefore, ensuring that CAF members are equipped with disaster-specific skills, emotional intelligence, and interagency fluency is not simply a matter of efficiency; rather, it is also a matter of ethical and operational responsibility.

3.3.4. Strategic Risks of Overreliance

While the CAF has played a vital role in disaster response, growing dependence on their assistance reveals deeper structural vulnerabilities within the civilian emergency system. Indeed, Leuprecht[5] warns that normalizing military involvement creates a structural dependency, allowing governments to delay critical investments in local preparedness by defaulting to the military as a convenient stopgap. This approach not only strains the CAF's readiness for its core defence and international responsibilities, but it also risks embedding complacency in civil systems that are already under-resourced.

From a strategic perspective, relying on the CAF masks broader policy failures. As Etkin[9] et al. has asserted, military support can provide a temporary sense of control, but it does little to address chronic issues such as underfunded emergency services, outdated infrastructure, or insufficient evacuation planning. Without a clear rebalancing of responsibilities, the system becomes reactive rather than resilient, thus placing undue pressure on military responders to compensate for civilian shortfalls.

While the present structure and institutional arrangement are unsustainable, they persist in part because military deployment offers visible, politically rewarding responses during crises. While governments are facing pressure to act decisively under media scrutiny, calling in the CAF can provide a greater sense of immediacy and reassurance compared to investments in longer-term civilian infrastructure. In resource-constrained environments, this short-term expediency often outweighs structural reform, further entrenching the reliance.

This dynamic also has human consequences. When local agencies lack the capacity to respond adequately, it is communities—particularly those that are already vulnerable—that bear the brunt of slow or uneven recovery efforts. While highly capable, the CAF is not structured or equipped to replace the nuanced, community-centered work of civilian responders. Relying on service members to do so requires them to take on complex roles for which they are not trained and diverts attention from civilian-led sustainable, long-term solutions.

The participants emphasized the need for strategic recalibration. Specifically, they called for targeted investments in local surge capacity—such as trained civilian reserves, pre-positioned equipment, and regional coordination bodies—that would reduce the need for military involvement. These measures would not only enhance civilian readiness but also ease political pressure to deploy the CAF in situations better handled by dedicated emergency services.

3.3.5. NGO Integration and Civil Society Engagement

The findings of this study highlighted a persistent gap in Canada's disaster-management system: the limited integration of civil society actors, including NGOs and Indigenous-led organizations, in formal emergency planning. These groups often play essential roles during crises—for example, by delivering frontline services, facilitating community outreach, and providing culturally

sensitive support—yet they are frequently brought in only after key planning decisions have been made. This delayed involvement weakens coordination and fails to capitalize on the valuable insights and capacities these actors can contribute from the outset.

The stakeholders also highlighted the roles of NGOs in community mobilization in emergencies. Several scholars have argued that NGOs serve as vital connectors between formal institutions and the communities they aim to protect, particularly in circumstances where trust in government or military actors is strained.[85,159] This is especially true in marginalized or remote communities, where local organizations often have long-standing relationships and deep contextual knowledge that state agencies may lack.

The participants stressed that meaningful NGO involvement must go beyond ad hoc collaboration. Instead, they advocated for formal mechanisms—for example, memoranda of understanding, joint training exercises, and inclusion in planning boards—to embed civil society participation into emergency protocols. Ensuring the participation of civil society would not only improve coordination during actual deployments, but it would also relieve military personnel from taking on social support roles for which they are not trained.

The more systematic integration of NGOs also reflects a broader shift toward inclusive, community-based disaster governance. As the scale and complexity of emergencies increase, a more diverse and distributed network of responders is needed—one that values localized knowledge, mutual trust, and cultural competence, in addition to logistical efficiency. Failing to harness these assets risks both operational inefficiency and diminished public legitimacy.

3.3.6. Public Expectations and Communication Gaps

Public perception increasingly frames the CAF as a dependable and ever-available emergency response option. Although this perspective reflects the military's respected status in Canadian society, it also creates a gap between public expectations and institutional realities. As Thomas[128] notes, the symbolic value of military presence during crises must be managed carefully, especially when public trust is relied on as a substitute for clear policy or operational capacity.

This mismatch is often reinforced by the media, which frequently portrays CAF deployment as a swift and decisive solution to complex disasters. However, such narratives elide

the logistical and emotional challenges involved in such operations, leading communities to expect rapid, comprehensive assistance that the CAF is neither trained nor resourced to provide.[82] These idealized depictions deepen the disconnect between what the public assumes the military can deliver and its actual mandate, which in turn places pressure on both military personnel and political leaders. For instance, elected officials may feel compelled to request military assistance in response to public demand, even when it may not be operationally necessary. While this dynamic is problematic, it is not entirely unfounded, as the CAF has participated in many highly visible and effective interventions in remote or under-resourced communities. These experiences reinforce public belief in the military's value and efficacy in emergency response efforts.

Without clear public communication, reliance on the military risks normalizing the inappropriate use of its resources and distracts from the urgent need to strengthen civilian disaster capacity. The participants in this study called for a coordinated national strategy to clarify the CAF's domestic role. To this end, governmental agencies such as Public Safety Canada and the Department of National Defence could lead public education campaigns outlining the military's capabilities, limitations, and deployment criteria. Transparent communication would further build public trust while reducing premature or politically driven demands for CAF assistance.

3.4. Conclusions and Policy Implications

The findings of this study underscore the urgent need for a comprehensive recalibration of Canada’s emergency management policy. First, federal and provincial governments must streamline the Request for Assistance (RFA) process by establishing pre-authorized agreements and clearer activation thresholds, thereby reducing bureaucratic delays. Second, integrating joint, scenario-based training into regular practice across military and civilian agencies will be essential to improving coordination and operational fluency. Third, national doctrine should formally recognize the distinct demands of domestic disaster response by embedding disaster-specific competencies—especially cultural sensitivity and trauma-informed approaches—into CAF training. Fourth, the role of civil society, including NGOs and Indigenous organizations, should be institutionalized within emergency planning through formal partnerships and consistent representation in coordination frameworks. Lastly, public education campaigns should be developed to reset expectations about the CAF's domestic role and ensure public perception aligns

with operational realities. Collectively, these reforms would move Canada toward a more sustainable, inclusive, and strategically balanced model of emergency governance.

The findings of this work illuminate the many challenges and tensions inherent to civil-military coordination in Canada's emergency management landscape. Perhaps most significantly, the current overreliance on the CAF to fill systemic civilian capacity gaps is simply unsustainable, especially given the increasing frequency and complexity of climate-driven disasters. From bureaucratic delays and institutional misalignment to training shortfalls and underutilization of community actors, the findings suggest a critical need for structural and cultural reform. While the CAF has demonstrated commendable agility and public trust, its role must be delineated and supported by robust civilian infrastructure, inclusive planning frameworks, and coordinated governance mechanisms.

The future of Canada's emergency management performance depends on recalibrating the balance between military and civil responsibilities. This will require sustained investment in local preparedness, strengthened interagency collaboration, and deliberate efforts to integrate civil society expertise. Rather than defaulting to military solutions, Canadian policy domains must prioritize resilience-building across all levels of government and society. Through thoughtful reform, Canada can develop a more adaptive, equitable, and resilient model of disaster and emergency response that acknowledges the strengths and limitations of military involvement.

Chapter 4: Discussion and Conclusion

4.1. Introduction

Climate change has led to an increase in the frequency and intensity of natural disasters across Canada, including floods, wildfires, and ice storms.[2] As a result, the Canadian Armed Forces (CAF) have been called upon more frequently to assist civil authorities during emergencies.[4,82] Historically regarded as a last-resort responder when local and provincial resources were overwhelmed, the CAF is now more routinely engaged in domestic disaster responses—not merely due to capacity shortfalls, but also because climate change has made disasters more dangerous, fast-evolving, and complex, requiring capabilities like strategic airlift, logistics, and rapid mobilization that only the military can provide. This trend raises significant questions about the sustainability of the CAF's expanded role and its integration within Canada's civilian-led emergency management system.[5,7] Without clear frameworks for cooperation and standardized procedures, military involvement in civilian emergency tasks risks straining both military and civilian institutions.[6] Compounding these challenges are organizational differences—such as variations in command structures and communication styles—that further complicate civil-military collaboration during large-scale disasters.[2,8] Despite the importance of these dynamics, research specifically examining civil-military coordination mechanisms within the Canadian disaster response system remains limited,[9] revealing a crucial gap that this study seeks to address.

In consideration of the above, this thesis aimed to critically assess the present civil-military coordination structures in Canada in light of its disaster response strategy. The objective was to identify the most critical structural issues and propose evidence-based strategic recommendations for addressing the nation's approaching major crises. The study concentrated on the following three specific objectives:

1. **To examine intergovernmental coordination systems in Canadian disaster response**, with particular attention to how existing legislative, institutional, and command structures influence the roles and interactions of civilian and military actors during emergencies.
2. **To analyze inter-organizational coordination among the diverse stakeholders involved in domestic emergency management**, including federal, provincial, and municipal authorities, the CAF, and non-governmental organizations—in order to

understand how these actors communicate, plan, and operate collaboratively (or in conflict) during crisis situations.

3. **To identify the main barriers and opportunities for improving collaborative capacity and response effectiveness in large-scale emergencies**, as perceived by civil and military stakeholders, and to propose evidence-based recommendations for strengthening civil-military cooperation and overall emergency management in Canada.

I employed a qualitative, exploratory research design to achieve these goals, which is particularly beneficial for analyzing complex institutional and social processes in real-world settings.[67,151] Data were gathered via several channels. The primary source of the required information was the key informants, a total of 26 individuals selected based on their firsthand experience with civil-military coordination and disaster management, who were interviewed using a semi-structured questionnaire. Among these attendees were military (CAF) officials, representatives from various levels of government (federal, provincial, and local), non-governmental organizations, and scholarly professionals. Crucial in exposing institutional insights and human experiences on disaster coordination, the interviews presented a range of viewpoints from the civil-military spectrum. To encourage contact among interested parties and investigate group opinions on the difficulties of civil-military collaboration, a focus group discussion (FGD) was organized. Participating in the focus group discussion session were a diverse group of individuals from various sectors, including federal and provincial ministries, municipal emergency offices, Canadian Armed Forces members, non-governmental organization responders, and academics. This facilitated cross-sectoral conversations on shared concerns and best practices in home catastrophe response.

Appropriate laws, rules, emergency response systems, and after-action reports were examined using a thorough document study. Analysis of these records helped triangulate the focus group results; the Emergency Management Act and the National Defence Act provided vital background information. Using qualitative techniques, including interviews, group discussions, and document analysis, the study thoroughly assessed the current state of civil-military cooperation in Canadian disaster response, stakeholder experiences, and recorded policies and practices.

4.2. Discussion

This section reflects on the key findings of the research, closely linking them to the study's previously outlined objectives. Rather than simply listing problems, it critically assesses how Canada's civil-military coordination challenges may be addressed. The discussion is organized thematically, progressing from issues of intergovernmental coordination to challenges in inter-organizational cooperation among military and civilian stakeholders, and ultimately to the barriers that hinder the country's ability to develop collaborative capacity for large-scale emergencies. To situate these findings within a broader academic conversation, comparative insights from international experiences—including those of the USA and New Zealand—were highlighted throughout. This approach not only highlights where Canada's challenges align with or diverge from those observed elsewhere, but also critically examines the structural, political, and organizational forces that continue to shape the country's evolving disaster management system. The section concludes with a series of evidence-based recommendations designed to strengthen Canada's civil-military disaster response capabilities.

As in Canada, other developed nations have struggled with the complex task of coordinating military and civilian actors during domestic disasters. Comparative analysis with the United States and New Zealand reveals both promising strategies and persistent barriers that cut across national boundaries. For instance, the United States' Defence Support of Civil Authorities (DSCA) framework[174] and New Zealand's centralized Civil Defence Emergency Management (CDEM)[175] system both provide structured mechanisms for integrating military support into civilian-led disaster responses—an area where Canada continues to rely on more ad hoc, informal arrangements.

Taken together, these international models point to a consistent lesson: the effectiveness of civil-military disaster response depends far less on the military's strength and much more on the civilian systems, legal frameworks, and cooperative habits that surround it. As this study highlights, Canada faces persistent deficits in these areas—especially a lack of permanent civilian surge capacity, overreliance on the CAF for routine disaster tasks, and the absence of nationally standardized coordination protocols.

Positioned within the broader academic literature, this research speaks to a growing recognition that civil-military cooperation is not merely a technical exercise in logistics, but a

complex institutional challenge involving governance structures, organizational cultures, and political dynamics.[160,176] While past studies have called attention to the importance of whole-of-government strategies[160] and network governance models,[177] few have examined the specific friction points between civilian and military actors within federated, multi-jurisdictional systems like Canada's. This thesis therefore offers new insights into the practical obstacles—such as role ambiguity, fragmented authority, and cultural divergence—that often prevent seamless collaboration when it is most needed.

In addition, this work adds to Canadian scholarship. Earlier contributions have warned about the dangers of growing military dependency in times of domestic emergency.[11] By combining empirical stakeholder insights with a comparative lens, this research offers a more nuanced framework for understanding not only what barriers persist, but why they remain stubbornly embedded—and what practical institutional reforms could help to address them.

Building on these contributions, the findings from this study provide a grounded, real-world perspective on the state of civil-military disaster coordination in Canada. Through the voices of key informants and focus group participants, as well as the analysis of critical policy documents, a complex web of interrelated challenges emerges. These issues do not exist in isolation but are tightly intertwined, collectively undermining the speed, clarity, and effectiveness of Canada's disaster response efforts. Among the most salient concerns are the ambiguous roles assigned to the CAF during emergencies, cultural and procedural mismatches between military and civilian organizations, jurisdictional fragmentation causing delays in mobilization, limited opportunities for joint training and preparation, and a growing dependency on military support stemming from chronic underfunding of civilian systems. Together, these findings tell a story of a civil-military relationship that, while built on goodwill and professionalism, remains hindered by institutional gaps that urgently need to be closed.

The results revealed a number of long-standing and interconnected issues, including unclear roles for the CAF in disaster response, cultural and procedural differences between civilian and military entities, delayed mobilization due to jurisdictional fragmentation, inadequate joint training and preparedness, and a growing dependence on the military as a result of underfunded civilian systems.

As Leuprecht and Kasurak[11] warned, an increasing reliance on the CAF as a frequent support actor in domestic disaster response—rather than a true last resort—risks eroding military readiness and may inadvertently undermine the development of robust civilian emergency response capabilities. This study supports those concerns by providing specific data for a reallocation of tasks whereby the CAF acts as a strategic partner—activated when needed—but not as a replacement for local response systems. This study informs current scholarly and policy debates on the proper extent and sustainability of military involvement in domestic crises.

To enhance successful inter-organizational cooperation during crises, the paper emphasizes the importance of institutional clarity, trust-building, and cooperative operational frameworks.[30] It also highlights the shortcomings of official policy when practical experience and continuity of relationships are lacking. According to Boin and Lodge[176], "latent vulnerabilities" inside seemingly stable institutions include organizational isolation, imprecise directives, and poor participation prior to disasters. This study identifies these elements as the primary causes of several coordination frictions, emphasizing the need to invest in soft infrastructure (e.g., cooperative planning entities, liaison projects, and joint training) to improve hard capacities, such as personnel and equipment.

From a policy standpoint, the thesis research initiative was undertaken at a pivotal moment in Canada's crisis governance system: a post-pandemic review of domestic crisis response systems and the increasing frequency and severity of climate-related disasters have increased interest in civil-military coordination, provinces are increasingly requesting assistance from the Canadian Armed Forces, and the federal government's recent efforts to establish a pan-Canadian civilian response capability underscore the strengths and weaknesses of current systems. This thesis contributes to the body of evidence-based knowledge that can guide these developments.

However, the interviews and discussions conducted during this study reveal hope for the future. Both military and civilian practitioners agree to the need for improved coordination procedures, increased training, and a fairer distribution of responsibilities among agencies and governments. Implementing structural change in a dispersed federation like Canada remains challenging, and the development of more robust and coherent emergency systems depends critically on this mutual understanding.

The conclusions of this study highlight the necessity—and the viability—of transforming ad hoc cooperation into institutional resilience as Canada faces an increasingly turbulent risk environment. This thesis presents a comprehensive, stakeholder-informed, and context-specific study of civil-military cooperation in Canada's disaster response, thereby enhancing scholarly research and informing policy development. It also offers a set of evidence-based suggestions to support a change toward improved preparedness, responsibility, and coherence, indicating a system undergoing transformation—strained but intentional. Lessons from international models reinforce the critical need for Canada to formalize civil-military cooperation frameworks, strengthen local civilian capacities, and institutionalize interagency planning and training as proactive measures rather than reactive solutions

4.3. Key Findings of the Research

This section synthesizes the principal discoveries from the study, structured around the research objectives outlined in Chapter 1. Drawing on interviews, focus group discussions, and documentary analysis, it identifies the most significant operational and structural insights regarding civil-military coordination during disaster response in Canada. Rather than reiterating broader discussions from the previous chapter, this section distills the findings into concise thematic areas that reflect the practical realities and institutional dynamics experienced by stakeholders (Table 4.1). It serves as a bridge between detailed qualitative narratives and actionable recommendations, offering a thematic summary that underscores both persistent challenges and areas for potential reform.

Table 4.1. Thematic Summary of Key Insights

Research Objective	Thematic Area	Key Insight
Objective 1: To investigate problems of intergovernmental collaboration in Canadian disaster response	Intergovernmental Coordination and Governance Difficulties	The results revealed that coordination among federal, provincial, and municipal levels remains fragmented, with delayed decision-making resulting from jurisdictional overlaps and multi-tiered request systems.

Research Objective	Thematic Area	Key Insight
	Roles and Responsibilities	Confusing command authority and an uneven understanding of CAF responsibilities caused uncertainty during deployment, thereby compromising operational clarity.
Objective 2: To examine among several stakeholders inter-organizational cooperation	Operations and Cultural Asymmetries	Seamless cooperation during emergencies was hampered by noticeable variations in institutional cultures, expectations, and communication systems between civilian and military players.
	Training and Preparedness	Stakeholders identified a lack of coordinated, cross-sectoral training exercises, and the limited domestic disaster preparation received by CAF personnel.
	Stakeholder Engagement and NGO Integration	Non-governmental actors and community organizations have been insufficiently integrated into formal response planning, leading to parallel efforts and reduced synergy.
Objective 3: To find obstacles and chances for strengthening military-civil collaboration	Capacity and Military Assistance	Insufficient civilian capacity at the municipal and provincial levels has been leading to growing dependence on military assistance for core disaster response functions.

Research Objective	Thematic Area	Key Insight
	International Comparisons and Lessons Learned	Comparative analysis with the Unites states and New Zealand offered alternative models of decentralized response, intermediate military forces, and clearer operational doctrines for improving coordination and responsiveness.

The thematic analysis identifies persistent issues in Canada's civil-military disaster response framework. At the intergovernmental level, coordination remains fragmented, with delays caused by overlapping jurisdictions and unclear request protocols. There is considerable confusion about the roles and responsibilities of military versus civilian agencies, especially during deployment. Organizational differences and limited joint training hinder operational integration, while NGOs are often excluded from formal planning. Furthermore, insufficient civilian capacity has led to increasing reliance on the CAF. Lessons from the United States and New Zealand highlight models that incorporate intermediate forces and clearer operational doctrines, offering potential pathways to reform.

4.3.1. Intergovernmental Coordination and Governance Challenges

One of the main challenges found in this study is the lack of strong coordination between different levels of government during disasters. Canada's federal system allows provinces and municipalities to manage their own emergencies, but this can often lead to confusion when large-scale disasters occur. Many participants said that communication between federal, provincial, and municipal governments is not always smooth. As a result, important decisions are delayed, and resources take longer to reach where they are needed.[4,9] Some also suggested that there are no clear, standardized procedures for when and how to request assistance from the CAF. This deficiency complicates response efforts.

Findings from the focus group discussions (FGDs) and key informant interviews (KIIs) indicated that the current multi-tiered military assistance request system is time-consuming and

often ineffective. Requests for CAF support must first be approved through local and provincial channels before being authorized nationally, resulting in critical delays during emergencies. Emergency management officials highlighted that this slow process can significantly undermine the speed of disaster response.

The results also revealed that differences in emergency management strategies across provinces, along with jurisdictional overlaps, led to inconsistent coordination practices. While some provinces have formal protocols and trained emergency operations centers, others rely more heavily on ad hoc arrangements and federal support. This discrepancy results in unequal access to federal resources and inconsistent CAF integration across different regions. Many municipal officials emphasized that local actions often stall as decision-makers wait for provincial approval before requesting military support, largely due to uncertainties around the scope of provincial involvement.

The absence of a shared national doctrine further clouds the picture. Unlike the United States—which allows state-level military deployment via the National Guard, using the Defence Support of Civil Authorities (DSCA) framework[155,174]—Canada does not have pre-authorized activation thresholds or an intermediate military response system. Similarly, New Zealand's Civil Defence Emergency Management Act establishes clear military functions within a broader civil defence framework, ensuring coordinated national and local responses.[178] In contrast, Canada's disaster governance relies heavily on informal relationships and reactive strategies, which leave the system vulnerable to uncertainty during disasters.

Although national documents such as the Federal Emergency Response Plan[18] and Canada's National Emergency Response System[138] provide overarching guidance, the document analysis revealed that they do not outline detailed deployment protocols or rigid decision-making timelines—understandably so, as the unique and evolving nature of each disaster makes highly prescriptive plans impractical. Instead, these frameworks prioritize flexibility, coordination principles, and role clarity among agencies. As a result, provincial and local officials are often left unsure whether CAF support will be justified, or available in a timely manner. Interviewees broadly supported the idea of creating a uniform national coordination framework, featuring joint planning cells, integrated information systems, and clearly defined deployment thresholds.

Overall, the findings clearly show that Canada's intergovernmental collaboration for disaster response suffers from structural governance deficiencies. Addressing these issues requires clarifying jurisdictional roles, developing integrated communication and planning systems, and formalizing interagency protocols to ensure a timely and coordinated national response during future disasters.

These coordination gaps reveal deeper structural weaknesses in Canada's federal disaster governance, underscoring the urgent need for more unified and anticipatory intergovernmental mechanisms to prevent future crises from escalating.

4.3.2. Roles and Responsibilities

The study found a general sense of uncertainty about the roles of military and civilian actors during disaster response operations. Although some of this difficulty is related to broader coordination problems, participants primarily attributed it to institutional mandates, operational limitations, and the absence of a shared national doctrine as the root causes. Many representatives from municipal emergency offices, provincial authorities, and the CAF emphasized that confusion often arises not only when requesting military aid, but also more so after military units are deployed on the ground.

This uncertainty most often concerns operational authority and command structures, since the military and civil systems operate under different frameworks. These differences create challenges during joint operations, which in turn affect overall effectiveness. Stakeholders frequently questioned whether, during CAF deployments, military forces act as equal partners with some operational autonomy or simply as support units under civilian leadership. Different interpretations stem from the lack of a consistent national framework. In some provinces, emergency managers expect to lead military forces once deployed, while others defer to CAF operational leadership. These variations lead to significant differences in mission planning, task performance, and accountability, as noted by Etkin et al.[9] and Leuprecht and Kasurak .[11]

Another key finding was the uncertainty within organizations themselves. The findings suggest that this problem is not simply a communication issue, but reflects deeper policy gaps. This is unlike the Unites States, which defines military roles during domestic emergencies through the DSCA framework,[174] or in New Zealand, which legislates military integration in civilian disaster response using the CDEM Act.[178]

One of the most concerning outcomes of this role ambiguity is the negative impact on efficiency and trust during joint operations. When military actors feel underutilized or improperly assigned, and civilian agencies perceive the CAF as operating beyond their authority, it damages cooperation. Previous studies have emphasized that a successful disaster response depends heavily on clear mutual understanding of roles, responsibilities, and expectations among all participating institutions.[159,179]

This persistent role ambiguity suggests that, without a clear national doctrine, operational confusion will likely continue to undermine the effectiveness and legitimacy of Canada's disaster response system. To address persistent role ambiguity, the federal government should work collaboratively with the provinces to develop a harmonized national framework that defines operational authority, responsibilities, and coordination procedures between civilian agencies and the CAF during domestic disaster responses. The core issue is not simply the lack of federal policy, but the significant variability in emergency management structures, capacity, and protocols across provinces, which hampers seamless civil-military cooperation. While acknowledging that the CAF is already facing increasing operational demands and resource constraints, developing joint operating doctrines, establishing standardized liaison roles within local emergency operations centers, and conducting regular joint training exercises remain essential. These initiatives would not necessarily increase deployment frequency but rather ensure that when CAF support is requested, civilian and military actors are better prepared to operate in a coordinated and efficient manner. By improving mutual understanding processes and capacities, these steps can enhance effectiveness during emergencies without placing an undue additional burden on the military.

4.3.3. Cultural and Operational Issues

An important finding that emerged from this study is the cultural and operational differences between military and civilian actors during disaster response. Although problems of coordination and role clarity contribute to operational inefficiencies and occasional jurisdictional confusion, these challenges are compounded by differing institutional norms, communication styles, and command hierarchies. The participants often describe deeper differences in organizational values, decision-making processes, and approaches to authority. These cultural and operational gaps create friction that can slow down response efforts and complicate joint activities. Although CAF Liaison Officers are embedded within provincial EMOs to facilitate coordination, challenges persist due

to differing operational mandates, resource constraints, and varying levels of preparedness across jurisdictions. Rather than attributing fault solely to provincial systems, the issue lies in the broader complexity of aligning multi-level governance structures under time-sensitive disaster conditions. Participants from both the CAF and civilian agencies reported that they sometimes have very different ways of working during emergencies. For example, the CAF is structured around centralized command, clear hierarchies, and rapid decision-making, often favoring quick action without lengthy consultation. In contrast, many civilian agencies prioritize consensus-building, multi-agency meetings, and adherence to procedural steps before making decisions. When these two approaches meet during disaster operations, misunderstandings about priorities, timing, and communication styles often arise.[9,11]

Stakeholders also noted that military personnel are trained to focus on mission success and operational discipline, while civilian responders may be more focused on public consultation, political accountability, and transparency. These differences can lead to frustration on both sides. Military actors may perceive civilian agencies as slow and indecisive, while civilians may view military teams as too rigid or aggressive in their approach. This disconnect both within and between organizations leads to duplicated efforts, delayed responses, and avoidable tensions during disaster operations.

Without stronger efforts to bridge these cultural and operational gaps, disaster response efforts risk delays, duplicated actions, or misaligned goals. Participants suggested that joint training exercises, cross-agency liaison roles, and shared operational planning would help foster mutual understanding and reduce friction during real deployments. Building better relationships between civilian and military responders before disasters happen is critical to improving overall effectiveness. Addressing these cultural and procedural divides is not just a matter of improving communication, but of building mutual institutional respect and understanding across sectors before emergencies occur.

4.3.4. Training and Preparedness

A major finding of this study is that lack of preparation seriously weakens civil-military collaboration during domestic disaster responses. Participants from various sectors reported that CAF personnel often receive limited specialized training for domestic emergencies, which makes it harder for them to integrate smoothly into civilian-led operations. As one academic observer

pointed out, disaster response is not the military's primary mission, and the current CAF training reflects this reality. As a result, military personnel may not be fully prepared for roles such as organizing evacuations, managing flood responses, or assisting in wildfire suppression.

Many interviewees and focus group participants strongly recommend expanding joint training exercises and interagency disaster simulations. They emphasized the need for training programs that allow military units, federal and provincial agencies, and local responders to practice working together before real emergencies occur. Several participants noted that existing CAF training for disaster response is limited, despite deployments becoming more frequent. Without better preparation in civilian procedures and disaster-specific operations, military responders may struggle to meet the complex demands of real-world emergencies, potentially compromising effectiveness and coordination.

Document analysis supports these findings. Bollen and Kalkman.[159] argue that continuous cooperation depends on consistent training and clearly defined roles across all sectors Many stakeholders supported the idea of introducing pre-deployment disaster response courses and developing formal collaborative training initiatives as standard practice. Most Provinces do offer these, and the Canadian Red Cross and other responders complete them. Institutionalizing joint training programs would help close a significant gap in Canada's current disaster readiness and enhance the overall ability of civilian and military organizations to collaborate under high-pressure conditions. Strengthening preparedness in this way would also help build legitimacy and public confidence in Canada's disaster response system. The lack of consistent joint training programs points to a systemic vulnerability that, if left unaddressed, will continue to erode the efficiency and trust needed for successful civil-military cooperation during disasters.

4.3.5. Stakeholder Engagement and NGO Integration

The results of this study also revealed that non-governmental organizations (NGOs), community-based groups, and other non-state stakeholders—despite their significant expertise, local knowledge, and logistical flexibility—are not fully integrated into Canada's formal disaster response system. This critical yet often overlooked finding highlights deeper structural issues within Canadian disaster management, which tends to prioritize vertical government coordination over horizontal collaboration with community-level actors during civil-military crisis operations. NGO representatives expressed concern about their limited engagement in disaster response and

preparedness efforts during both the focus group and interviews. Many noted that, although they are consistently present on the ground providing food, shelter, psychosocial support, and evacuation assistance, they are rarely invited to participate in joint planning exercises or included in official provincial or CAF-led preparations.

Such exclusion creates serious challenges during actual disaster operations. Essential services can be duplicated or missed, resources may be wasted, and coordination can break down. For example, NGOs may launch operations without access to the latest information, which can confuse responders and frustration for the public. At the same time, government agencies and CAF units might plan support activities without realizing that organizations like the Red Cross, local volunteer groups, or Indigenous networks are already delivering similar services.

In contrast, international models demonstrate the benefits of formally integrating NGOs into disaster systems. In New Zealand, for example, the CDEM framework incorporates NGOs directly into local and regional disaster teams, encouraging joint planning, information sharing, and regular collaborative exercises.[180–182] Similarly, the Unites States NGOs are identified under the National Response Framework as indispensable collaborators with pre-defined roles and incorporation into the Emergency Support Function framework.[77] These strategies institutionalize the involvement of civil society actors, ensuring a consistent and transparent role for NGOs by leveraging their unique strengths and community-level access.

By comparison, Canada's approach remains fragmented and inconsistent. Although the Canadian Red Cross maintains strong ties with some local governments, there nationally coordinated system for Canadian Redcross but not effective . On the other hand there is less to no nationally coordinated system for NGO engagement across provinces. Participants observed that this inconsistency often results in unequal treatment, with larger, better-funded organizations gaining access while smaller grassroots or Indigenous groups are excluded from planning and response activities.

Overall, the findings highlight the urgent need for Canada to formally integrate stakeholder participation into its disaster response strategy. Clear policies should be developed to guarantee NGO involvement, including assigning NGO liaison officers within emergency operations centers and involving community organizations in civil-military training and simulation exercises. Strengthening these partnerships would enhance operational capacity, promote equity, and ensure

a more effective and inclusive disaster response system. Greater integration of NGOs and community-based actors is essential not only for operational effectiveness but also for promoting equity, inclusivity, and social trust during national crises.

4.3.6. Capacity Limitations and Reliance on the Military Support

A key finding of this study is the increasing reliance on the CAF to fill specific capacity gaps—such as strategic airlift, heavy engineering support, and logistical coordination—that are often beyond the reach of local and provincial emergency response systems. For example, CAF aircraft and helicopters have been repeatedly used to evacuate communities and deliver supplies to remote areas during floods and wildfires. While such capabilities are vital during high-impact events, this dependency raises concerns about sustainability and readiness. To address these gaps without overburdening the military, Canada could invest in civilian-led capabilities (e.g., through Public Safety Canada or provincial emergency agencies), expand inter-provincial resource-sharing agreements, and contract private sector solutions (e.g., chartered lift capacity) to supplement response efforts where feasible.

These conditions create a form of disorganized institutional structure that undermines resilience, where civilian authorities, under financial and political pressure, may become less motivated to invest in strengthening local capabilities. Municipalities with limited budgets might postpone investments in preparedness, assuming that CAF support will be available when needed. Bowen[183] argues that this structural dependence weakens the development of community-based resilience and ultimately compromises the overall effectiveness of Canada's emergency response system.

Reducing overreliance on the CAF would not only help create a stronger, more balanced, and community-driven disaster response system but would also protect military readiness for other essential missions. The study's findings suggest that Canada must reframe the CAF's domestic disaster role from a default first responder to a strategic supplementary resource. Achieving this shift will require creating regional civilian surge organizations, institutionalizing joint planning efforts, and making long-term investments in strengthening local emergency services.

4.3.7. International Comparisons and Lessons Learned

This comparative analysis highlights important structural innovations and lessons that could help guide improvements in Canada's disaster response system. While each country operates within its own constitutional and political framework, the comparative study revealed both the relative strengths of Canada's military responsiveness and its institutional shortcomings, particularly regarding policy clarity, intermediate response capacity, and integrated planning

Several Canadian stakeholders expressed support for a similar concept, suggesting the creation of a "National Disaster Reserve Force" that could act as intermediate responders. Canada currently lacks a structural equivalent to the National Guard and does not have a pre-authorized mechanism for rapid military support. Instead, provinces must make official federal requests to deploy the CAF, a process that is often slow and inconsistent across regions. In order to change this, Canada would need to change the NDA and the Constitution.

In New Zealand, domestic emergency management tasks function under its CDEM Act which has embraced a highly centralized system of emergency governance combining military support into a single national response structure.[178] Local and regional disaster plans contain pre-defined responsibilities for the NZDF, and the integration helps to clearly communicate, coordinate planning, and rapidly deploy crises[152]—all of which serve to lower uncertainty and reduce the duplication of efforts.

By contrast, Canada's approach to civil-military cooperation stays mostly reactive and unofficial, with neither regular involvement of military personnel in provincial or local emergency preparedness, nor a national policy defining when and how the CAF should be engaged. Participants consistently mentioned this lack of proactive cooperation as a recurring obstacle to optimal disaster response. Unless municipalities and provinces significantly invest in their own disaster capabilities, the growing reliance on military intervention risks creating long-term vulnerabilities in Canada's emergency management architecture.

Three key lessons emerge from international comparisons. First, establishing a formalized intermediate response force—whether through a civilian-military hybrid unit or by strengthening reserve capacity—could significantly improve Canada's speed and flexibility in disaster response. Second, creating established liaison roles and institutionalized cooperative planning frameworks

would enhance operational effectiveness and build stronger mutual understanding among agencies. Third, developing a clear legal framework or doctrine, similar to the DSCA in the USA, would provide transparency and consistency, standardizing the conditions for military mobilization and deployment.

The experiences of other countries offer useful templates—not rigid models—for building a more unified, integrated, and resilient Canadian disaster response system. While Canada benefits from having a highly professional and capable military, its overall disaster governance would be greatly strengthened by adopting some of the structural innovations already demonstrated successfully in comparable international contexts.

4.4. Recommendations

4.4.1. Enhancing Intergovernmental Coordination in Disaster Response

- **Clarify Roles, Responsibilities, and Coordination Frameworks:** The research identified overlapping mandates and communication gaps between federal, provincial, and municipal authorities during disaster responses. It is recommended that governing bodies update and clarify existing emergency frameworks, such as the Federal Emergency Response Plan, to more sharply delineate responsibilities and streamline processes for requesting federal or CAF assistance. Clear criteria outlining when provinces and territories should escalate requests would help ensure that local resources are exhausted first, strengthening the "last resort" principle.[11] Strengthening this principle through policy instruments, such as memoranda of understanding or disaster legislation, can help prevent the structural dependency—of provinces underinvesting in local emergency capacity while relying on federal support. Leuprecht and Kasurak[11] emphasize that federal ministers often find it politically difficult to refuse provincial pleas for aid, reinforcing the need to incentivize provincial investment through mechanisms such as cost-sharing or targeted funding programs. This clarification of governance will improve unity of effort across governments.
- **Standardize Emergency Management Training and Accreditation:** Differences in emergency management competencies across jurisdictions were identified as a major barrier to effective coordination. To address this, it is recommended that Public Safety Canada and the Department of National Defence collaborate with provinces and academic institutions to

establish a standardized national training curriculum and accreditation system. This echoes the recommendations of the House of Commons Standing Committee on National Defence for "standardized core capabilities and competencies" across all disaster response roles.[184] Standardizing training, including certification in the Incident Command System (ICS), would ensure that emergency managers across Canada share a common language and operational approach. A uniform competency framework would significantly improve intergovernmental integration during joint operations.

- **Improve Joint Planning and Exercises:** The study found that inconsistent joint planning practices across government levels weakened disaster responses. It is therefore recommended that federal, provincial, and municipal authorities conduct regular joint disaster planning and simulation exercises, with consistent involvement of the CAF. Annual or biannual exercises, incorporating Indigenous governments where applicable, would build familiarity with protocols, test communication systems, and foster strong working relationships before a real disaster occurs.[184,185] Regular joint exercises build familiarity with protocols, test communication channels, and foster relationships before a crisis strikes. Such efforts should also involve Indigenous governments where applicable, ensuring inclusivity. A culture of *preparedness* through exercises will help identify coordination issues in advance and improve the efficacy of real-world responses.[185] Moreover, tabletop exercises at the interdepartmental level can enhance federal coordination across departments.[11] Implementing lessons learned from these drills in updated plans or protocols will create a continuous improvement loop in intergovernmental coordination.
- **Establish Strong National Leadership and Communication Channels:** Findings suggest that a clear national leadership structure is needed to coordinate disaster responses involving multiple governments. Therefore, it is recommended to empower a federal lead (e.g., the Minister of Emergency Preparedness and Public Safety Canada) to act as the *single coordination hub* during large-scale emergencies. This entails maintaining robust liaison links with each province/territory and municipal authorities. A dedicated federal coordination center, as envisaged by the National Emergency Response System, should be consistently used to harmonize efforts.[185] Participants in a recent Public Safety Canada consultation emphasized the importance of having a central liaison role to connect all partners (governmental and non-governmental).[185] By strengthening these communication channels and leadership roles, any

intergovernmental frictions can be resolved in real time and a unified strategy can be communicated to all levels of responders.

4.4.2. Strengthening Inter-Organizational Cooperation Among Key Stakeholders

- **Adopt a Unified Incident Management System Across Agencies:** The study highlighted that disparate organizational structures and institutional cultures—among military, civilian agencies, and NGOs—can hamper seamless coordination during disaster responses. While the Incident Command System (ICS) is already a pan-Canadian standard designed to "improve interoperability between all response organizations",[186] full integration of the CAF into ICS operations remains limited due to national security protocols and the sensitive nature of military intelligence systems. As such, the CAF typically operates in parallel coordination rather than full integration. To mitigate these barriers, Public Safety Canada, as the federal coordinating body, plays a critical role in harmonizing joint responses through multi-agency planning, ensuring that military and civilian operations remain aligned while respecting jurisdictional and operational constraints. Ensuring that CAF units, emergency services, and NGOs integrate into a unified command or coordination structure on-site will enhance communication and reduce confusion. For example, during a wildfire or flood response, a unified command post should include military liaison officers, local incident commanders, and NGO coordinators working side by side. Training all partners in ICS protocols (as per the standardized curriculum above) will reinforce this unity. Effective adoption of a common structure fulfills the objective of a *whole-of-government* and *whole-of-society* approach, as each actor knows how to plug into the overall organization. Unless municipalities and provinces significantly invest in their own disaster capabilities, the growing reliance on military intervention risks creating long-term vulnerabilities in Canada's emergency management architecture.
- **Embed Liaison Officers and Improve Multi-Agency Communication:** Direct, person-to-person links are critical during large emergencies. It is recommended that the CAF expand its liaison officer program, embedding officers within provincial emergency operations centers and with major NGOs during disasters, to facilitate real-time coordination. Likewise,

civilian agencies should designate liaison personnel to be embedded within military headquarters when the CAF is deployed. Two-way liaison mechanisms have been found to greatly speed up information flow and build mutual understanding in previous case studies. Establishing prescribed communication protocols and interoperable systems (e.g., radios, data-sharing platforms) among the CAF, government agencies, and NGOs would help break down information silos. Recent Public Safety Canada consultations stressed the need for systems where *"everyone knows what everyone brings to the table"*.[185] Developing a shared emergency management information platform would allow partners to update situational reports, track resources, and coordinate needs efficiently. Investing in communication interoperability and liaison structures will ensure that all actors operate with a common operating picture during emergencies.

- **Formalize Partnerships with NGOs and Community Organizations:** The research underscores that non-governmental organizations (e.g., the Red Cross, Team Rubicon, Salvation Army, local volunteer groups) are indispensable partners in disaster response, yet coordination with them is often ad hoc. To enhance civil-military and civil-civil cooperation, governments should establish formal partnership frameworks with key NGOs *before disasters occur.* This could involve including NGO representatives in planning committees, integrating them into training exercises, and developing agreements on roles and information-sharing. The Emergency Management NGO Consortium of Canada (EMNCC) provides a useful model for how NGOs can coordinate among themselves and interface with government.[184] Stronger NGO partnerships would allow officials to leverage the specialized capabilities that NGOs bring, such as shelter management, psychosocial support, and technical expertise. As the study and academic research both suggest, building trust and clear operational relationships with humanitarian actors improves overall response effectiveness.[187]
- **Leverage Private Sector and Community Resources:** Beyond NGOs, broader societal cooperation is essential for effective disaster response. It is recommended that public-private partnership protocols be developed with key private sector partners—such as utilities, technology companies, and logistics firms—to support emergency operations. For example, agreements could ensure rapid restoration of communications networks or the quick supply of essential goods. Similarly, local community organizations, including Indigenous community response teams, should be included in coordination planning to ensure culturally appropriate

and accepted solutions. Engaging a wide network of stakeholders not only increases available resources but also distributes the burden of response more equitably. This whole-of-society approach, advocated for in resilience literature and emphasized during consultations, strengthens Canada's ability to support vulnerable populations and enhances overall disaster resilience.[185] By institutionalizing these wider partnerships (through liaison, agreements, and joint training), Canada can maximize the strengths of each sector in a crisis and ensure the CAF's efforts are effectively complemented by civilian expertise.

4.4.3. Overcoming Barriers and Building Collaborative Capacity in Large-Scale Emergencies

- **Build and Empower a Dedicated Civilian Disaster Response Capacity:** A major finding of the research is the heavy reliance on the Canadian Armed Forces (CAF) for disaster tasks that do not always require military-specific skills, such as sandbagging, basic search and rescue, or debris clearing.[188] To alleviate this burden and address capacity gaps, Canada should invest in creating a civilian disaster response unit or corps that can be mobilized for large-scale emergencies. Establishing a national civilian response organization or significantly enlarging the volunteer base of existing services (like search-and-rescue organizations or provincial emergency teams) would enhance resilience. It also aligns with recent federal initiatives, such as the $100 million *Civilian Humanitarian Workforce* program aimed at recruiting and training volunteers.[184] By building this capacity, routine disaster response can be handled by trained civilians and volunteers, freeing the CAF to focus on tasks where military expertise is truly indispensable or on its primary defence missions.
- **Reaffirm CAF's Domestic Support Role and Limitations:** While enhancing civilian disaster response capacity remains essential, it is equally important to clarify the CAF's role as a supporting instrument—not a lead agency—in domestic emergencies. The CAF should be positioned as a surge capacity tool, mobilized to fill operational gaps when provincial or municipal authorities are overwhelmed or require highly specialized support. These may include capabilities such as strategic airlift, engineering support, or logistics in remote or inaccessible regions. Ultimately, civilian institutions—under the coordination of Public Safety Canada—must retain command authority and responsibility for overall emergency

management, with the CAF serving in an auxiliary and time-limited capacity. However, the pattern of treating the CAF as a first-choice responder must be avoided.[188] Senior defence leaders have cautioned that routine domestic deployments, if unchecked, could erode military readiness for defence tasks.[188] Thus, the government should develop doctrine or guidelines that codify the CAF's role as a supplement to civil authorities, not a substitute. Therefore, updated doctrine or policy—potentially through revisions to the National Defence Act—should codify the CAF as a "last resort" resource, deployed only when civilian capabilities are overwhelmed.[183] Clear communication of this policy to provincial governments and the public will help manage expectations. At the same time, the CAF must ensure that members deployed domestically receive appropriate mental health and operational support, given the unique stresses of such missions. Reaffirming the CAF's role in this balanced way will preserve its operational effectiveness across its full range of responsibilities.

- **Invest in Emergency Management Infrastructure and Resources:** Under-resourcing of civilian emergency management organizations, which can lead to coordination breakdowns and overreliance on military aid, has been identified as a major barrier.[11] Governments at all levels should increase investments in emergency management personnel, training, and equipment. This includes funding provincial and municipal emergency services to ensure they have sufficient staffing and tools (e.g., high-capacity pumps, emergency shelters, communication gear) to respond to moderate disasters without outside help. The Standing Committee on National Defence (2024) specifically recommended that provinces and territories invest in their emergency management, mitigation, and response capacity so they "only rely on the CAF as a last resort".[184] Federal support through grants or cost-sharing can incentivize these upgrades. Additionally, conducting a national inventory of disaster-response assets across departments (as also recommended by the committee) would identify gaps and overlaps in capabilities.[184] For instance, knowing what airlift assets, engineering teams, medical units, etc., exist in civilian agencies and industry can help mobilize them efficiently when needed, before drawing on the military. In short, closing the resource and capability gap on the civilian side is both a barrier-removal strategy and an opportunity to strengthen the overall system. Well-resourced emergency organizations will collaborate more confidently and efficiently with the CAF, as equals in capability within their respective domains.

- **Promote the Culture of Collaboration and Continuous Learning:** Finally, sustainable disaster governance requires building a stronger culture of collaboration and continuous improvement. After every major disaster, a formal after-action review involving all key stakeholders—CAF, federal, provincial, municipal governments, NGOs, and private sector partners—should be convened. Lessons identified must be integrated into revised plans, updated training programs, and improved interagency agreements. Public Safety Canada emphasized the need for a culture of innovation and learning within emergency organizations.[185] Establishing a national lessons-learned centre or task force could help institutionalize knowledge sharing. Additionally, encouraging *cross-pollination of personnel* can break down cultural barriers; for example, seconding CAF officers to work in emergency management agencies (and vice versa) for a term, or hosting joint workshops and conferences for military and civilian responders. Such initiatives build mutual respect, understanding of each other's operating procedures, and professional networks that can be leveraged in crises. Over time, this collaborative culture will reduce misunderstandings and turf issues and create a more adaptive, cohesive disaster response community.
- **Institutional Realignment of Public Safety Canada's Emergency Management Role:** As outlined in Section 3.1, Public Safety Canada's legislated role under the Emergency Management Act (2007) positions it as the federal coordinator for disaster and emergency management in the country. However, this function is embedded within a broader portfolio that also includes national security, law enforcement policy, border integrity, crime prevention, and community safety[167–170]. In a multilevel governance context, Henstra[13] observes that embedding emergency management within such broad policy domains diffuses responsibility, creates ambiguity in authority, and strains coordination mechanisms—particularly when multiple priorities compete for finite political attention and resources.[13] As seen in recent multi-jurisdictional incidents, this structural arrangement has contributed to inconsistent application of the Request for Federal Assistance process, fragmented situational awareness, and procedural delays[171,172]. These issues are exacerbated when provincial and territorial mutual aid agreements are not aligned with federal coordination protocols, complicating the integration of CAF's support [13,173]. To address these governance gaps, Canada should consider establishing a dedicated disaster management directorate within Public Safety Canada

with operational autonomy, a dedicated budget line, and authority to standardize national RFA protocols and mutual aid frameworks across jurisdictions.

- **Strengthening Civilian and Community-Based First Response Capacity:** During disasters, the time dimension is one of the most critical factors in reducing loss of life, limiting damage, and restoring essential functions.[189] The immediate hours after an event—the so-called "golden hours"—are when first responders can play a crucial role in stabilizing the situation.[190] When members of the general public, trained volunteers, and local responders act quickly, they not only save lives, but also expand the overall emergency response capacity, reducing the risk of exhausting limited professional and military resources

Canada should invest in a structured civilian disaster response corps capable of mobilization for large-scale emergencies. Such a corps—organized regionally and supported by ongoing training—would serve as a surge capacity in the immediate aftermath of disasters. This approach aligns with the Humanitarian Workforce Program[191], which aims to recruit and train volunteers for rapid deployment. By institutionalizing a civilian corps, the CAF could focus on tasks that require its unique capabilities (e.g., airlift, engineering) or be reserved as the last resort in extreme situations.

Non-governmental organizations (NGOs) and community-based initiatives are equally critical in this model. Operating at the grassroots level, NGOs are often embedded in the communities they serve, enabling culturally sensitive and needs-driven interventions during and after disasters[192]. These organizations can provide immediate shelter, food distribution, psychosocial support, and localized coordination, bridging the gap between state emergency services and affected populations. When integrated into formal emergency management plans—through pre-disaster MOUs, participation in Emergency Operations Centres, and regular joint exercises—NGOs can reduce the need for large-scale CAF deployments by absorbing part of the initial response burden.

An illustrative example comes from Switzerland's civil protection system, which mandates public participation in disaster preparedness and integrates local civil defense units into the national emergency structure. This system enables rapid, decentralized mobilization in the early stages of a crisis, significantly reducing the time lag before professional or military

intervention[193]. By adapting elements of this model, Canada could strengthen its first-responder base, ensure a swifter and more efficient disaster response, and build resilience from the ground up.

In summary, these recommendations call for a multifaceted approach to strengthening civil-military cooperation and overall disaster response capacity. By refining intergovernmental coordination mechanisms, building stronger civilian and community-based disaster resources, and addressing cultural and operational barriers, Canada can develop a more resilient, cohesive, and effective emergency management system. Each recommendation is grounded in the research findings and supported by contemporary scholarly and policy insights. Implementing these measures would position Canada to respond more effectively to the increasing frequency and complexity of disasters, ensuring a stronger and more unified national response when future crises arise.

4.5. Contributions of the Research

This work contributes to the growing body of knowledge on civil-military collaboration, disaster governance, and emergency management in several respects, through its theoretical insights, empirical results, and pragmatic implications. The study responds to recent calls for a better understanding of Canada's coordination structures in the face of increasingly complex disasters by critically analyzing how the Canadian Armed Forces (CAF) interact with civilian authorities during natural disaster-triggered domestic emergencies.[11,183] The study also addresses the relative lack of integrated, multi-stakeholder studies in the Canadian setting, where research on military-civilian collaboration has sometimes been scattered or limited to small operational scopes.

While previous research has emphasized the importance of whole-of-government approaches[194] and network governance models in disaster response,[160] few studies have thoroughly investigated how the structural and cultural boundaries between civilian and military institutions affect coordination outcomes during domestic crises. This study demonstrates how institutional misalignments, doctrinal uncertainty, and governance asymmetries influence cooperative practices, thus offering a complex theoretical framework of "role ambiguity" and "coordination friction" in multi-actor disaster response systems

By challenging the widely held notion that the CAF is merely a technical tool. to be used in times of crisis, the study also advances civil-military studies by demonstrating how the military's involvement reflects—and sometimes exacerbates—the structural flaws in Canadian federalism and emergency preparedness. By placing CAF installations within the broader frameworks of subsidiarity[iii], risk governance, and public sector capability, the study provides a more comprehensive understanding of how disaster response functions in distributed systems. This multi-method approach provides a rare, triangulated view of how Canadian civil-military coordination operates at institutional, operational, and relational levels. The study is empirically based on original data collected via focus groups, key informant interviews, and comparative policy analysis, including the Unites States and New Zealand. The information clarifies the perspectives, constraints, and institutional logics of many players, including city authorities, federal and provincial emergency managers, CAF officials, and non-governmental organizations.

The comparative lens fills a significant empirical gap by highlighting other models (such as the US National Guard or New Zealand's centralized coordinating system) that offer relevant lessons for Canadian legislators. Few Canadian studies have brought together in a single analytical framework such a broad spectrum of stakeholders across levels of government and sectors. The study documents how fragmentation, miscommunication, and role confusion manifest in reality and how trust, training, and inclusive planning could offset these obstacles.

4.6. Future Research Directions

In addition to offering new insights into the dynamics of civil-military cooperation in domestic disaster response within the Canadian context, this thesis offers several important avenues for future research, particularly as the frequency and complexity of natural disasters continue to increase in a changing climate. These recommendations are made with the goal of bolstering, broadening, and expanding the body of knowledge generated by this work.

4.6.1. Expanding Institutional and Geographic Reach

Future research could include comparative cases from Canada's northern, remote, and Indigenous communities, where governance structures and links with the Canadian Armed Forces (CAF) may vary greatly. Previous studies have highlighted the importance of localized disaster governance, particularly in Indigenous settings, where historical injustices may influence faith in state

institutions—including the military—which shapes diverse experiences of civil-military collaboration among the several provinces of Canada. One of the most urgent directions for future research is to broaden the geographic reach of empirical investigations. This analysis focused primarily on players from a small number of provinces and federal agencies.

4.6.2. Longitudinal and crisis-specific research

As noted by Boin and Lodge[176] , institutional learning is usually uneven and rather dependent on political will and organizational culture. Therefore, it would be beneficial to examine how coordinating techniques change over time, particularly when actors learn from past events. Other areas of interest include the application of after-action review results, institutional memory, and whether changes in leadership or election cycles sustain reforms.

Future research should examine these newly emerging junctions to assess whether current coordination strategies are suitable for addressing changing and hazardous environments. Additionally, investigations tailored to specific crises—such as pandemics, cyberattacks, or industrial accidents—could reveal different coordination dynamics than those seen in naturally occurring disasters.

4.6.3. Cross-National Comparative Analysis

While the Unites States and New Zealand perspectives were included in this study, a more systematic, cross-national comparative analysis would help situate Canada's policies in a broader global context. Using a typology of civil-military coordination models across federal and unitary regimes, researchers can identify key enabling conditions, such as legal frameworks, standing interagency organizations, or training cultures. This analysis could yield useful comparative lessons using civil protection systems found in other countries

4.6.4. Civilian Perspectives and Social Impacts

Survey-based studies and community-based participatory research could reveal the social impacts of civil-military cooperation, ensuring that future studies center around citizen voices—not just institutional ones. As Perry and Lindell[195] argue, good emergency management must be both technically sound and socially acceptable. Eventually, studies on the social aspects of civil-military disaster cooperation should also take center stage in investigations. How do populations affected by disasters perceive the role of military involvement during crisis situations, and what impact

does this have on their trust in public institutions? Future research should address these questions to investigate and seek answers.

End Note:

i FEMA: The Federal Emergency Management Agency is an agency of the United States Department of Homeland Security responsible for coordinating the federal government's response to natural and man-made disasters.[77]

ii Here, the term "technological" refers to the technical domain where incompatibility in communication infrastructure and digital systems used by civilian and military agencies, including differences in radio frequencies, data platforms, and software, prevents seamless information sharing during joint emergency operations.

iii *Subsidiarity* is a governance principle stating that decisions and responsibilities should be handled by the smallest or least centralized competent authority, with higher levels of government intervening only when issues cannot be effectively managed at lower levels (e.g., local or provincial governments leading disaster response, with federal support as needed).[17,196,197]

References

1. Public Safety Canada. (2019). *Emergency Management Strategy for Canada: Toward a Resilient 2030*. March 2, 2019. https://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/mrgncy-mngmnt-strtgy/index-en.aspx
2. Etkin, D., Medalye, J., & Higuchi, K. (2011). *Climate warming and natural disaster management: An exploration of the issues*. *Climatic Change*, *112,* 585–599. https://doi.org/10.1007/s10584-011-0259-6
3. Botha, J. (2022). *Boots on the Ground: Disaster Response in Canada*. University of Toronto Press. https://doi.org/10.3138/9781487529789.002
4. Hudson, M. J. (2021). *Confronting climate change: The Canadian Army and domestic operations*. School of Advanced Military Studies, United States Army Command and General Staff College. https://apps.dtic.mil/sti/trecms/pdf/AD1161081.pdf
5. Leuprecht, C. (2020). *The moral hazard in using Canadian Armed Forces as provincial first responders* [Commentary]. *Macdonald-Laurier Institute*. December 8, 2020. https://macdonaldlaurier.ca/moral-hazard-canadian-armed-forces/
6. Ratchev, V., & Tagarev, T. (2018). Policy and legal frameworks of using armed forces for domestic disaster response and relief. *Information & Security: An International Journal, 40*(2), 137–166. https://doi.org/10.11610/isij.4011
7. Malešič, M. (2015). *The impact of military engagement in disaster management on civil–military relations. Current Sociology, 63*(7), 993–1014. https://doi.org/10.1177/0011392115577839
8. Michaud, J., Moss, K., Licina, D., Waldman, R., Kamradt-Scott, A., Bartee, M., Lim, M., Williamson, J., Burkle, F., Polyak, C. S., Thomson, N., Heymann, D. L., & Lillywhite, L. (2019). *Militaries and global health: Peace, conflict, and disaster response. The Lancet, 393*(10168), 276–286. https://doi.org/10.1016/S0140-6736(18)32838-1
9. Etkin, D., McBey, K., & Trollope, C. (2011). *The military and disaster management: A Canadian perspective on the issue* (pp. 1–32). Canadian Risk and Hazards Network. http://www.crhnet.ca/Library

10. Etkin, D., Haque, C. E., Bellisario, L., & Burton, I. (2004). *An assessment of natural hazards and disasters in Canada: A report for decision-makers and practitioners.* Canadian Natural Hazards Assessment Project. Environment Canada; Public Safety and Emergency Preparedness
11. Leuprecht, C., & Kasurak, P. (2020). *The Canadian Armed Forces and humanitarian assistance and disaster relief: Defining a role.* Centre for International Governance Innovation. August 24, 2020. https://www.cigionline.org/articles/canadian-armed-forces-and-humanitarian-assistance-and-disaster-relief-defining-role/
12. Bush, E., & Flato, G. (2019). *Canada's Changing Climate Report* (Cat. No. En4-368/2019E-PDF; ISBN 978-0-660-30222-5) [PDF]. Environment and Climate Change Canada. https://publications.gc.ca/collections/collection_2019/eccc/En4-368-2019-eng.pdf
13. Henstra, D. (2013). *Multilevel Governance and Emergency Management in Canadian Municipalities.* McGill-Queen's University Press. https://www.mqup.ca/multilevel-governance-and-emergency-management-in-canadian-municipalities-products-9780773542846.php
14. Lecours, A. (2019). Dynamic De/Centralization in Canada, 1867–2010. *Publius: The Journal of Federalism*, *49*(1), 57–83.
15. Henstra, D. (2010). Explaining local policy choices: A multiple streams analysis of municipal emergency management. *Canadian Public Administration, 53*(2), 241–258. https://doi.org/10.1111/j.1754-7121.2010.00128.x
16. Boin, R. A., & 't Hart, P. (2010). *Organising for effective emergency management: Lessons from research. Australian Journal of Public Administration, 69*(4), 357–371. https://doi.org/10.1111/j.1467-8500.2010.00694.x
17. Public Safety Canada. (2018). *An Emergency Management Framework for Canada—Third Edition*. Public Safety Canada. https://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/2017-mrgnc-mngmnt-frmwrk/index-en.aspx?
18. Public Safety Canada. (2024). *Parliamentary Committee Notes: Federal Emergency Response Plan (FERP)*. (March 25, 2024). Public Safety Canada. https://www.publicsafety.gc.ca/cnt/trnsprnc/brfng-mtrls/prlmntry-bndrs/20240322/06-en.aspx

19. Legislation Services Branch. (2007). *Consolidated federal laws of Canada, Emergency Management Act*. August 3,2007. https://laws-lois.justice.gc.ca/eng/acts/e-4.56/page-1.html
20. Haque, C. E. (2000). Risk Assessment, Emergency Preparedness and Response to Hazards: The Case of the 1997 Red River Valley Flood, Canada. *Natural Hazards*, *21*(2), 225–245. https://doi.org/10.1023/A:1008108208545
21. Bland, D. L. (1999). *Canada's National Defence: Volume 1: Defence Policy* (Annotated edition). Defence Management Series.
22. Department of National Defense. (2024). *Operation LENTUS* [Education and awareness]. Government of Canada. July 22,2024. https://www.canada.ca/en/department-national-defence/services/operations/military-operations/current-operations/operation-lentus.html
23. Department of National Defence. (2014). *Operation LENTUS* [Education and awareness]. Government of Canada. April 17,2014. https://www.canada.ca/en/department-national-defence/services/operations/military-operations/current-operations/operation-lentus.html
24. Department of National Defence. (2018). *Evaluation of the Department of National Defence (DND) Contributions to Humanitarian Operations (HO), Disaster Relief Operations (DRO), and Non-combatant Evacuation Operations (NEO)* (Catalogue No. D58-19/2013E-PDF) [Monograph]. Public Safety Canada. December 13, 2018. https://www.canada.ca/en/department-national-defence/corporate/reports-publications/audit-evaluation/evaluation-department-national-defence-contributions-to-humanitarian-operations.html
25. Hallman, M. G. (2018). *Domestic Operations Readiness: Evolving to Match Preparedness to Threats*.
26. Madge, C., & Smith, R. (2024). *Hurricanes and climate change in Atlantic Canada*. Canadian Centre for Climate Services. ClimateData.ca. September 5,2024. https://climatedata.ca/hurricanes-and-climate-change-in-atlantic-canada/
27. Brennan, S. (2023). *Impact of spring flooding in key areas across Canada*. *EnviroStats* (Catalogue No. 16-002-X). Statistics Canada. January 30,2023. https://www150.statcan.gc.ca/n1/pub/16-002-x/2019001/article/00002-eng.html

28. Kulkarni, A. (2021). *A look back at the 2021 B.C. wildfire season | CBC News*. April 10, 2021.https://www.cbc.ca/news/canada/british-columbia/bc-wildfires-2021-timeline-1.6197751
29. McNamara, K. (2021). *Media brief: The link between extreme weather and climate change*. Clean Energy Canada. June 28,2021. https://cleanenergycanada.org/the-link-between-extreme-weather-and-climate-change/
30. Kapucu, N., & Van Wart, M. (2006). The evolving role of the public sector in managing catastrophic disasters: Lessons learned. *Administration & Society, 38*(3), 279–308. https://doi.org/10.1177/0095399706289718
31. Sylves, R. (2008). *Disaster Policy and Politics: Emergency Management and Homeland Security* (Updated edition). CQ Press.
32. Federal Emergency Management Agency. (2011). *Military Resources in Emergency Management*. (IS-75 Student Manual, May 2011 ed.). U.S. Department of Homeland Security.
33. *Defence Act 1990 No. 28* (2022), Public Act 10, Powers of requisition. (n.d.). *New Zealand Legislation*. December 1, 2022. https://legislation.govt.nz/act/public/1990/0028/latest/DLM205889.html
34. New Zealand Legislation. (2015). *National Civil Defence Emergency Management Plan Order 2015*. February 6, 2015. https://www.legislation.govt.nz/regulation/public/2015/0140/latest/DLM6486715.html
35. House of Commons. Standing Committee on National Defence. (2024). *Providing aid to the civil power: Disaster relief and the Canadian Armed Forces' domestic operations* (p. 68) [Report of the Standing Committee on National Defence]. House of Commons.
36. Natural Resources Canada. (2008). *What adaptation*. Natural Resources Canada. August 13,2008. https://www.nrcan.gc.ca/climate-change/what-adaptation/10025
37. *Canada's Changing Climate Report*. (n.d.). Retrieved November 20, 2022, from https://changingclimate.ca/CCCR2019/
38. *Chapter 4—Canada's Changing Climate Report*. (n.d.). Retrieved November 20, 2022, from https://changingclimate.ca/CCCR2019/chapter/4-0/

39. *Canada's top 10 weather stories of 2022*. (2022). [Education and awareness]. December 21, 2022. https://www.canada.ca/en/environment-climate-change/services/top-ten-weather-stories/2022.html
40. Environment and Climate Change Canada. (2021). *Canada's top 10 weather stories of 2021*. December 16, 2021. https://www.canada.ca/en/environment-climate-change/services/top-ten-weather-stories/2021.html
41. Uguen-Csenge, E., & Lindsay, B. (2021). *For 3rd straight day, B.C. village smashes record for highest Canadian temperature at 49.6 C.* CBC News. June 29, 2021. https://www.cbc.ca/news/canada/british-columbia/bc-alberta-heat-wave-heat-dome-temperature-records-1.6084203
42. Cross, J. (2021). *British Columbia Flooding 2021. GlobalMedic*. November 22, 2021. https://globalmedic.ca/british-columbia-flooding-2021/
43. Environment and Climate Change Canada. (2021). *The impacts of a changing climate: Canada's top ten weather stories of 2021.* Government of Canada. https://www.canada.ca/en/environment-climate-change/news/2021/12/the-impacts-of-a-changing-climate-canadas-top-ten-weather-stories-of-2021.html
44. CBC News. (2021). *Top 10 weather stories of 2021*. CBC. August 4, 2021. https://www.cbc.ca/news/science/top-10-weather-stories-2021-1.6288139
45. Doberstein, C., Fitzgibbon, J., & Mitchell, C. L. (2018). *Top-down, bottom-up and sideways: The multi-layered development of resilience in the Canadian flood context*. Environmental Management, 61(1), 1–12. https://doi.org/10.1007/s00267-017-0959-3
46. Rock, C. (2019). *The Canadian Armed Forces and Domestic Operations: Unbalanced and Overstretched?* Canadian Forces College. 121.
47. Brewster, M. (2022). *The military can't be the first line of defence in domestic disasters, MPs told*. CBC News. October 5,2022. https://www.cbc.ca/news/politics/fadden-military-fiona-hurricane-natural-disasters-1.6605961
48. Rice, D., & Collins, T. (2023). *Canada wildfire smoke updates: At least 100 million Americans affected by air quality alerts*. USA TODAY. July 6, 2023. https://www.usatoday.com/story/news/nation/2023/06/07/air-quality-where-is-wildfire-smoke-the-worst-live/70297479007/

49. VOA News. (2023). *Canada Deploys Military to Battle Nova Scotia Wildfires*. VOA. June 2,2013 https://www.voanews.com/a/canada-deploys-military-to-battle-nova-scotia-wildfires-/7119851.html

50. Morris-Oswald, M. (2000). *Social criteria for multi-criteria decision analysis in flood management*. http://hdl.handle.net/1993/2128

551. Corriveau, G. M. (2000). *A Cross-Jurisdictional and Multi-Agency Information Model for Emergency Management* [Thesis, University of Winnipeg]. https://winnspace.uwinnipeg.ca/handle/10680/20

52. Haque, C., Kolba, M., Morton, P., & Quinn, N. (2002). Public involvement in the Red River Basin management decisions and preparedness for the next flood. *Global Environmental Change Part B: Environmental Hazards*, *4*(4), 87–104. https://doi.org/10.1016/j.hazards.2003.10.001

53. Stewart, R. M. (2007). *Community perspectives of flood risk and social vulnerability reduction: The case of the Red River Basin* (Master's thesis, University of Manitoba). University of Manitoba Institutional Repository. Retrieved January 28, 2023, from https://mspace.lib.umanitoba.ca/handle/1993/8023

54. The Canadian Press. (2022). *Red Cross calls for civilian force, less reliance on military for disaster response*. CTV News. October 4,2022. https://www.ctvnews.ca/canada/red-cross-calls-for-civilian-force-less-reliance-on-military-for-disaster-response-1.6095578

55. Rabson, M. (2023). *Ottawa looking at options for a national disaster response agency as wildfires rage* . CBC NEWS. June 7, 2023. https://www.cbc.ca/news/politics/national-disaster-response-agency-1.6868209

56. Public Safety Canada. (2018). *Canadian Disaster Database: Search results.* Government of Canada. December 21, 2018. https://cdd.publicsafety.gc.ca/rslts-eng.aspx?cultureCode=en-Ca&boundingBox=&provinces=&eventTypes='AV','CE','DR','FL','GS','HE','HU','SO','SS','ST','TO','WF','SW','EQ','LS','TS','VO'&eventStartDate=&injured=&evacuated=&totalCost=&dead=&normalizedCostYear=1&dynamic=false

57. Creswell, J., & Poth, C. (2017). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. Sage Publications Inc.

58. Merriam, S. B., & Tisdell, E. J. (2015). *Qualitative Research: A Guide to Design and Implementation* (4th edition). Jossey-Bass.
59. Gray, D. E. (2004). *Doing research in the real world*. Sage Publications.
60. Morris, M. W., Leung, K., Ames, D., & Lickel, B. (1999). Views from inside and outside: Integrating Emic and Etic Insights about Culture and Justice Judgment. *The Academy of Management Review*, *24*(4), 781–796. https://doi.org/10.2307/259354
61. Pike, K. L. (2015). *Language in Relation to a Unified Theory of the Structure of Human Behavior*. De Gruyter Mouton. https://doi.org/10.1515/9783111657158
62. Patton, M. Q. (2015). *Qualitative Research & Evaluation Methods*. SAGE Publications Inc. https://us.sagepub.com/en-us/nam/qualitative-research-evaluation-methods/book232962
63. Krueger, R., & Casey, M. (2014). *Focus Groups: A Practical Guide for Applied Research*. Sage Publications Inc.
64. Bowen, G. A. (2009). Document Analysis as a Qualitative Research Method. *Qualitative Research Journal*, *9*(2), 27–40. https://doi.org/10.3316/QRJ0902027
65. Gusenbauer, M., & Haddaway, N. R. (2020). Which academic search systems are suitable for systematic reviews or meta-analyses? Evaluating retrieval qualities of Google Scholar, PubMed, and 26 other resources. *Research Synthesis Methods, 11*(2), 181–217. https://doi.org/10.1002/jrsm.1378
66. Braun, V., & Clarke, V. (2006). *Using thematic analysis in psychology. Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa
67. Yin, R. (2017). *Case Study Research and Applications: Design and Methods*. Sage Publications Inc.
68. Richards, D. (1996). Elite Interviewing: Approaches and Pitfalls. *Politics*, *16*(3), 199–204. https://doi.org/10.1111/j.1467-9256.1996.tb00039.x
69. Nullis, C. (2021). *Weather-related disasters increase over past 50 years, causing more damage but fewer deaths*. World Meteorological Organization. August 31, 2021. https://public.wmo.int/en/media/press-release/weather-related-disasters-increase-over-past-50-years-causing-more-damage-fewer
70. World Wildlife Fund. (2025). *Is climate change increasing the risk of disasters?* World Wildlife Fund. January 14, 2025. https://www.worldwildlife.org/stories/is-climate-change-increasing-the-risk-of-disasters

71. Xu, J., Wang, Z., Shen, F., Ouyang, C., & Tu, Y. (2016). Natural disasters and social conflict: A systematic literature review. *International Journal of Disaster Risk Reduction, 17*, 38–48. https://doi.org/10.1016/j.ijdrr.2016.04.001

72. Centre for Research on the Epidemiology of Disasters (CRED) & United Nations Office for Disaster Risk Reduction (UNDRR). (2020, October 13). *The human cost of disasters: An overview of the last 20 years (2000–2019)*. UNDRR. https://www.undrr.org/sites/default/files/inline-files/Human%20Cost%20of%20Disasters%202000-2019%20FINAL.pdf

73. Ahmed, K., Agrawal, N., Haque, C. E., & Sadman Sakib, M. (2023). Nature-Triggered Disasters—Armed Forces. *Canadian Journal of Emergency Management*, *3*(1), 64–89.

74. Public Safety Canada. (2018, December 21). *Federal Policy for Emergency Management*. https://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/plc-mrgnc-mngmnt/index-en.aspx

75. National Defence Act, R.S.C. 1985, c. N-5 (Canada). (2024). *Justice Laws Website*. August 19, 2024) https://laws-lois.justice.gc.ca/eng/acts/n-5/index.html

76. House of Commons of Canada. (n.d.). *Committee report No. 13—NDDN (44-1)*. https://www.ourcommons.ca/documentviewer/en/44-1/NDDN/report-13/page-75

77. Federal Emergency Management Agency (FEMA). (2025). *National Response Framework*. U.S. Department of Homeland Security. April 18, 2025. https://www.fema.gov/emergency-managers/national-preparedness/frameworks/response\

78. Elsea, J. K., & Mason, R. C. (2012). *The use of federal troops for disaster assistance: Legal issues* (CRS Report No. R42669). Congressional Research Service.

79. Federal Emergency Management Agency (FEMA). (2015). *National Preparedness Goal*. U.S. Department of Homeland Security. Retrieved August 13, 2025, from https://www.fema.gov/emergency-managers/national-preparedness/goal

80. New Zealand Legislation. (2022). *Defence Act 1990 No 28*. January 12, 2022. https://legislation.govt.nz/act/public/1990/0028/latest/DLM205887.html

81. *National Civil Defence Emergency Management Plan Order 2015 (LI 2015/140) (as at 05 April 2023) 55 Role of New Zealand Defence Force during readiness – New Zealand Legislation*. (n.d.). Retrieved June 23, 2023, from https://www.legislation.govt.nz/regulation/public/2015/0140/latest/DLM6486716.html

82. Botha, J. (2022). *Boots on the Ground: Disaster Response in Canada*. University of Toronto Press. https://www.jstor.org/stable/10.3138/j.ctv2hvfjnb
83. Shadwick, M. (2018). The Canadian Armed Forces and Humanitarian Assistance and Disaster Relief (HADR). *Canadian Military Journal, 18*(4), 42–50.
84. Cohen, E. (2020). Military aid to the civil power: How much is enough? *Esprit de Corps*. April 1,2020. https://www.espritdecorps.ca/perspectives-1/military-aid-to-the-civil-power-how-much-is-enough
85. Kikkert, P. (2021). *Creating a non-military disaster workforce must be part of Canada's climate change response* (NAADSN Policy Brief). North American and Arctic Defence and Security Network. https://www.naadsn.ca/wp-content/uploads/2021/12/21-dec-Kikkert-Disaster-Workforce-Policy-Brief.pdf
86. Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publications.
87. Creswell, J., & Creswell, J. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (5th edition). Sage Publications.
88. North America. (n.d.). In *Encyclopædia Britannica*. Retrieved February 27, 2025, from https://www.britannica.com/place/North-America
89. WorldAtlas. (2023). *What continent is New Zealand in?* WorldAtlas. April 25,2023. https://www.worldatlas.com/articles/what-continent-is-new-zealand-in.html
90. Statistics Canada. (2018). *Geography*. In *Canada Year Book 2011* (Chap. Geography). January 17, 2018. https://www150.statcan.gc.ca/n1/pub/11-402-x/2011000/chap/geo/geo-eng.html
91. Tikkanen, A. (n.d.). *What's the largest U.S. state by area?* In *Encyclopædia Britannica*. Retrieved August 12, 2025, from https://www.britannica.com/topic/largest-U-S-state-by-area
92. Statistics Canada. (2025). *Canada's population clock (real-time model)* (Catalogue No. 71-607-X). July 11,2025. https://www150.statcan.gc.ca/n1/pub/71-607-x/71-607-x2018005-eng.htm
93. Worldometer. (2025). *New Zealand population (live)*. August 12, 2025. from Worldometer website: http://www.worldometers.info/world-population/new-zealand-population/

94. Faber, S. (2025). *What is the US National Guard and how is it deployed?* Deutsche Welle. June 9, 2025. https://www.dw.com/en/what-is-the-us-national-guard-and-how-is-it-deployed/a-72836481

95. Beauchemin, A. (2023). *What does a 1.5 °C increase in global temperatures mean for Canada?* CBC News. Retrieved August 13, 2025, from https://www.cbc.ca/news/science/wmo-report-1-5-degrees-what-about-canada-1.6847161

96. U.S. Environmental Protection Agency. (2024). *Climate change indicators: U.S. and global temperature*. Retrieved August 12, 2025, from https://www.epa.gov/climate-indicators/climate-change-indicators-us-and-global-temperature

97. National Institute of Water and Atmospheric Research. (n.d.). *Climate Change Adaptation Toolbox: Resources*. Retrieved August 12, 2025, from NIWA website: https://niwa.co.nz/climate-change-adaptation-toolbox/resources

98. Daniel, P. (2021). *Climate and weather related disasters surge five-fold over 50 years, but early warnings save lives—WMO report | UN News*. United Nations. September 1,2021. https://news.un.org/en/story/2021/09/1098662

99. Vision of Humanity. (2020). *Increase in natural disasters on a global scale by ten times*. Vision of Humanity. October 27,2020. Retrieved August 12, 2025, from https://www.visionofhumanity.org/global-number-of-natural-disasters-increases-ten-times/

100. Ellison, T., Sikorsky, E., & Wong, E. (2024). *MiRCH update: Key takeaways from tracking climate-related military deployments*. Center for Climate & Security. Retrieved August 12, 2025, from https://climateandsecurity.org/2024/01/mirch-update-key-takeaways-from-tracking-climate-related-military-deployments/

101. U.S. Navy, Commander, Logistics Group Western Pacific. (2025). *Pacific Partnership*. Retrieved August 12, 2025, from https://www.clwp.navy.mil/Pacific-Partnership/

102. Department of Foreign Affairs and Trade. (n.d.). *Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)*. Retrieved August 12, 2025, from https://www.dfat.gov.au/trade/agreements/in-force/cptpp/comprehensive-and-progressive-agreement-for-trans-pacific-partnership

103. Armed Forces Division. (n.d.). *Armed Forces Division in disaster management*. Government of the People's Republic of Bangladesh. Retrieved August 12, 2025, from https://afd.gov.bd/activities/armed-forces-division-in-disaster-management

104. Pararas-Carayannis, G. (2007). *Cyclone "SIDR" of 15 November 2007 in Bangladesh*. Retrieved August 12, 2025, from http://www.drgeorgepc.com/Cyclone2007BangladeshSIDR.html

105. Karim, M. (2007). *U.S. military ends cyclone aid mission to Bangladesh*. *ReliefWeb* (via Reuters). Retrieved August 12, 2025, from ReliefWeb: https://reliefweb.int/report/bangladesh/us-military-ends-cyclone-aid-mission-bangladesh

106. Parker, T., Carroll, S. P., Sanders, G., King, J. E., & Chiu, I. (2016). *The U.S. Pacific Command Response to Super Typhoon Haiyan*.

107. Center for Disaster Philanthropy. (2024, April 25). *2023 Turkey-Syria Earthquake*. Center for Disaster Philanthropy

108. Ozkan, O. (2024). Why Was Turkey's Military MIA After the Earthquake? *Foreign Policy*. May 22,2024. https://foreignpolicy.com/2023/02/24/turkey-earthquake-erdogan-military-tsk-diaster-response-reform-coup/

109. Juling, D. (2022). The German Military Response to National Disasters and Emergencies: A Case Study of the Flooding in the Summer of 2021. *Journal of Advanced Military Studies*, *13*(1), 210–218.

110. Burke, R. (2016). Lessons from Katrina: Commanding the military during disaster response - then and now. *International Journal of Emergency Management*, *12*(3), 221. https://doi.org/10.1504/IJEM.2016.079016

111. McTaggart-Cowan, R., Bosart, L. F., Gyakum, J. R., & Atallah, E. H. (2007). Hurricane Katrina (2005). Part I: Complex Life Cycle of an Intense Tropical Cyclone. *Monthly Weather Review*, *135*(12), 3905–3926. https://doi.org/10.1175/2007MWR1875.1

112. Knabb, R. D., Rhome, J. R., & Brown, D. P. (2023). *Tropical cyclone report: Hurricane Katrina, 23–30 August 2005* (Updated ed.). National Hurricane Center. Retrieved August 12, 2025, from https://www.nhc.noaa.gov/data/tcr/AL122005_Katrina.pdf

113. Natural Resources Canada. (2008). *Climate change adaptation in Canada*. Natural Resources Canada. August 13,, 2008. https://natural-resources.canada.ca/climate-change/what-adaptation/10025

114. Natural Resources Canada. (2013). *Mountain pine beetle*. Natural Resources Canada. October 25, 2013 https://natural-resources.canada.ca/our-natural-resources/forests/wildland-fires-insects-disturbances/top-forest-insects-and-diseases-canada/mountain-pine-beetle/13381

115. Public Safety Canada. (2025). *Parliamentary Committee Notes: Jasper, Alberta Wildfire*. January 23, 2025. https://www.securitepublique.gc.ca/cnt/trnsprnc/brfng-mtrls/prlmntry-bndrs/20250130/11-en.aspx?utm

116. Prime Minister of Canada. (2024). *Prime Minister Justin Trudeau convenes the Incident Response Group to discuss the wildfire situation in Jasper, Alberta* [Readout]. Government of Canada.https://www.pm.gc.ca/en/news/readouts/2024/07/25/prime-minister-justin-trudeau-convenes-incident-response-group-discuss

117. Government of Canada. (2025). *Climate change adaptation in Canada*. Natural Resources Canada. https://natural-resources.canada.ca/climate-change/what-adaptation/10025

118. CBC News. (2019). *Canada warming at twice the global rate, leaked report finds*. CBC. April 1,2019. https://www.cbc.ca/news/science/canada-warming-at-twice-the-global-rate-leaked-report-finds-1.5079765

119. Natural Resources Canada. (2009). *Overview of Climate Change in Canada*. Natural Resources Canada. October 22, 2009. https://natural-resources.canada.ca/changements-climatiques/impacts-adaptation/overview-climate-change-canada/10321

120. Valour Canada. (2020). *Red River Flood 1997*. January 24,2020. https://valourcanada.ca/military-history-library/red-river-flood-1997/

121. Shakil, I. (2024,). *First woman to lead Canada's armed forces takes command*. *Reuters*. https://www.reuters.com/world/americas/first-woman-lead-canadas-armed-forces-takes-command-2024-07-18/

122. *Prime Minister announces the appointment of the Chief of the Defence Staff*. (2021,). Prime Minister of Canada. November 25,2021. https://www.pm.gc.ca/en/news/news-releases/2021/11/25/prime-minister-announces-appointment-chief-defence-staff

123. CityNews Staff. (2022). *Defence chief calls for more disaster response as military faces growing demands* [News article]. *CityNews Ottawa*. https://ottawa.citynews.ca/2022/10/06/defence-chief-calls-for-more-disaster-response-as-military-faces-growing-demands-5920001/

124. Canyon, D. V., Ryan, B. J., & Burkle, F. M. (2020). Rationale for Military Involvement in Humanitarian Assistance and Disaster Relief. *Prehospital and Disaster Medicine*, *35*(1), 92–97. https://doi.org/10.1017/S1049023X19005168

125. Barber, E., & Aslip, G. (2012). Military Involvement in Humanitarian Supply Chains. In G. Kovács (Ed.), *Supply Chain Management: Concepts, Methodologies, Tools, and Applications* (pp. 123–146). IGI Global. https://doi.org/10.4018/978-1-4666-2625-6.ch081

126. Heaslip, G., & Barber, E. (2014). Using the military in disaster relief: Systemising challenges and opportunities. *Journal of Humanitarian Logistics and Supply Chain Management*, *4*(1), 60–81. https://doi.org/10.1108/JHLSCM-03-2013-0013

127. Saul, D. (2019). Domestic military disaster mitigation: A new approach. *Canadian Military Journal, 19*(3).

128. Thomas, M. D. (2014). *The Canadian Forces, Domestic Operations, and Public Confidence.* Canadian Forces College.

129. Fremis, A. (2021). Operation LENTUS and You: An Emergency Manager's Guide to the CAF. *Canadian Journal of Emergency Management*, *1*(2). https://doi.org/10.25071/3cf50m34

130. MacGregor, M. D. S. (2012). *Canadian Forces domestic operations: Are we ready to make Canada first?* (JCSP 38) [Master's of Defence Studies research project, Canadian Forces College]. Canadian Forces College.

131. Public Safety Canada. (2021). *Requests for federal assistance*. https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/rspndng-mrgnc-vnts/gvrnmnt-prtns-cntr/rqst-fdrl-sstssnc-en.aspx?utm

132. Babin, M. (2024). *Wasted resources: The need to rationalize the Canadian Armed Forces' use in domestic disaster relief operations* (Policy Brief No. 9:5). Centre for International and Defence Policy. Queen's University. https://www.queensu.ca/cidp/wasted-resources-need-rationalize-canadian-armed-forces-use-domestic-disaster-relief-operations

133. Chandes, J., & Paché, G. (2010). Investigating humanitarian logistics issues: From operations management to strategic action. *Journal of Manufacturing Technology Management*, *21*(3), 320–340. https://doi.org/10.1108/17410381011024313

134. Heaslip, G. (2012). *Challenges of Civil Military Cooperation / Coordination in Humanitarian Relief* [Chapter]. Relief Supply Chain Management for Disasters: Humanitarian, Aid and Emergency Logistics; IGI Global. https://doi.org/10.4018/978-1-60960-824-8.ch009

135. Kovács, G., & Tatham, P. (2009). Responding to Disruptions in the Supply Network-from Dormant to Action. *Journal of Business Logistics*, *30*(2), 215–229. https://doi.org/10.1002/j.2158-1592.2009.tb00121.x

136. Rietjens, S., Voordijk, H., & Boer, S. (2007). Coordinating Humanitarian Operations in Peace Support Missions. *Disaster Prevention and Management*, *16*, 56–69. https://doi.org/10.1108/09653560710729811

137. Public Safety Canada. (2018). *National Emergency Response System*. December 21,2018. https://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/ntnl-rspns-sstm/index-en.aspx#ann_a

138. Government of Canada. (2018). *Mandate of National Defence and the Canadian Armed Forces*. Department of National Defence. https://www.canada.ca/en/department-national-defence/corporate/mandate.html

139. Indigenous Services Canada. (2024). *National On-reserve All Hazards Emergency Management Plan*. Indigenous Services Canada. https://www.sac-isc.gc.ca/eng/1324572607784/1535123607689

140. Collins, C. J., & Blackburn, D. (Eds.). (2022). *Introduction to emergency management in Canada*. Emond Publishing. October,2022. ISBN 978-1-77255-678-0.

141. Abbott, P. L. (2019). *Natural Disasters,* (11th ed.). McGraw-Hill Education.

142. Conflict and Resilience Research Institute Canada (CRRIC). (2022, July 19). *MINDS project webinar #1* [Video recording]. https://www.youtube.com/watch?v=tUfuNZYgVkE

143. Government of Manitoba, Emergency Measures Organization. (2018). *Manitoba Emergency Plan* (PDF). Manitoba Emergency Measures Organization. https://www.manitoba.ca/asset_library/en/emo/mb-emergency-plan.pdf

144. National Guard. (n.d.). *About the Guard*. U.S. National Guard. Retrieved August 12, 2025, from https://www.nationalguard.mil/About-the-Guard/

145. Office of the Law Revision Counsel. (2025). *Title 32—National Guard, U.S. Code* (Preliminary Edition). U.S. House of Representatives. Retrieved August 12, 2025, from https://uscode.house.gov/view.xhtml?path=/prelim@title32&edition=prelim

146. Kapp, L. (2022). *Defense Primer: Defense Support of Civil Authorities*. Library of Congress, Congressional Research SVC. https://apps.dtic.mil/sti/citations/AD1159331

147. Department of Defense. (2015). *Defense support of civil authorities*. Department of Defense, United States of America.

148. *Code of Federal Regulations: Containing a codification of documents of general applicability and future effect as of December 31, 1948, with ancillaries and index.* (n.d.). University of Michigan Library Digital Collections. Retrieved August 12, 2025, from https://name.umdl.umich.edu/BAA5185.1936.001

149. Department of Defense. (2005). *Strategy for Homeland Defense and Civil Support* (p. 46). https://apps.dtic.mil/sti/citations/ADA435357

150. Kapucu, N. (2021). *The Role of the Military in Disaster Response in the U.S.* 27.

151. New Zealand Defence Force. (2017, November). *New Zealand defence doctrine (NZDDP–D) (Fourth edition)*. New Zealand Defence Force. https://www.nzdf.mil.nz/assets/Uploads/DocumentLibrary/NZDDP-D-4th-ed.pdf

152. Elsea, J. K., & Mason, R. C. (2012). *The use of federal troops for disaster assistance: Legal issues*. Congressional Research Service.

153. Federal Emergency Management Agency. (2011). *Presidential Policy Directive 8: National Preparedness | Homeland Security*. March 30,2011. https://www.dhs.gov/presidential-policy-directive-8-national-preparedness

154. National Guard. (n.d.). *The National Guard—Official Website of the National Guard*. (n.d.). Retrieved August 31, 2022, from https://www.nationalguard.mil/

155. Reynolds, A. (2022). *Who Controls the National Guard?* Constitution of the United States. September 24, 2022. https://constitutionus.com/law/who-controls-the-national-guard/

156. National Guard. (n.d.). *National Guard.* U.S. Department of Defense. Retrieved August 12, 2025, from https://www.nationalguard.mil/

157. Martellino, C. S. (2024). *National Search and Rescue Exercise 2024 at 19 Wing Comox*. Royal Canadian Air Force, Department of National Defence.

https://www.canada.ca/en/department-national-defence/maple-leaf/rcaf/2024/08/national-search-rescue-exercise-2024-19wing-comox.html

158. Government of Canada. (2025). *Operation NANOOK*. Department of National Defence. https://www.canada.ca/en/department-national-defence/services/operations/military-operations/current-operations/operation-nanook.html

159. Bollen, M., & Kalkman, J. P. (2022). Civil-Military Cooperation in Disaster and Emergency Response: Practices, Challenges, and Opportunities. *Journal of Advanced Military Studies*, *13*(1), 79–91. https://doi.org/10.21140/mcuj.20221301004

160. Kapucu, N. (2008). Collaborative emergency management: Better community organising, better public preparedness and response. *Disasters*, *32*(2), 239–262. https://doi.org/10.1111/j.1467-7717.2008.01037.x

161. Rubin, H., & Rubin, I. (2011). *Qualitative Interviewing: The Art of Hearing Data* (3rd edition). Sage Publications.

162. Brinkmann, S., & Kvale, S. (2015). *InterViews: Learning the Craft of Qualitative Research Interviewing*. SAGE Publications. https://uk.sagepub.com/en-gb/eur/interviews/book239402

163. Leung, F.-H., & Savithiri, R. (2009). Spotlight on focus groups. *Canadian Family Physician*, *55*(2), 218–219.

164. Bazeley, P., & Jackson, K. (Eds.). (2013). *Qualitative Data Analysis with Nvivo* (2nd edition). Sage Publications Ltd.

165. Paulus, T., Lester, J., & Dempster, P. (2013). *Digital Tools for Qualitative Research* (1st edition). Sage Publications.

166. Australian Government Defence. (2024). *Defence Assistance to the Civil Community Initiative*. January 3, 2024. https://www.defence.gov.au/defence-activities/programs-initiatives/defence-assistance-civil-community-initiative

167. Public Safety Canada. (2023). *Minister's Responsibilities*. November 23, 2023. https://www.publicsafety.gc.ca/cnt/trnsprnc/brfng-mtrls/trnstn-bndrs/20231123-1/01-en.aspx?utm

168. Public Safety Canada. (2025). *Public Safety Canada's 2025 to 2026 Departmental Plan*. June 17,2025. https://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/dprtmntl-pln-2025-26/index-en.aspx?utm

169. Public Safety Canada. (2023). *Raison d'Être, Mandate and Role, and Operating Context 2023–24*. March 9,2023. https://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/dprtmntl-pln-2023-24/rsn-tr-en.aspx?utm

170. Public Safety Canada. (2025). *Raison d'Être, Mandate and Role, and Operating Context 2025 to 2026*. June 17,2025 https://www.securitepublique.gc.ca/cnt/rsrcs/pblctns/dprtmntl-pln-2025-26/rsn-tr-en.aspx?utm

171. Kuban, R., MacKenzie-Carey, H., & Gagnon, A. P. (2001). Disaster response systems in Canada. *Institute for Catastrophic Loss Reduction*.

172. Russell, I. (2009). *Intergovernmental Cooperation and Coordination Within Canadian Disaster and Emergency Management: What Makes it Work?* [PhD Thesis, Royal Roads University]. https://www.collectionscanada.gc.ca/obj/thesescanada/vol2/002/MR50428.PDF?is_thesis=1&oclc_number=707816518

173. Curnin, S., Owen, C., Paton, D., & Brooks, B. (2015). A theoretical framework for negotiating the path of emergency management multi-agency coordination. *Applied Ergonomics*, *47*, 300–307. https://doi.org/10.1016/j.apergo.2014.10.014

174. Defense Support of Civil Authorities. (2011). *Defense Support of Civil Authorities* (Final Rule). *Federal Register*, *76*(9), 2246–2253. January 13,2011. https://www.federalregister.gov/documents/2011/01/13/2011-620/defense-support-of-civil-authorities-dsca

175. National Emergency Management Agency. (n.d.). *CDEM learning and development tools*. Ministry of Civil Defence & Emergency Management, New Zealand. Retrieved August 12, 2025, from https://www.civildefence.govt.nz/cdem-sector/capability-development/cdem-learning-and-development-tools

176. Boin, A., & Lodge, M. (2016). Designing Resilient Institutions for Transboundary Crisis Management: A Time for Public Administration. *Public Administration*, *94*(2), 289–298. https://doi.org/10.1111/padm.12264

177. Comfort, L. (2007). Crisis Management in Hindsight: Cognition, Communication, Coordination, and Control. *Public Administration Review*, *67*, 189–197. https://doi.org/10.1111/j.1540-6210.2007.00827.x

178. New Zealand Legislation. (2002). *Civil Defence Emergency Management Act 2002 No 33 (as at 26 November 2024), Public Act – New Zealand Legislation*. https://www.legislation.govt.nz/act/public/2002/0033/latest/whole.html

179. Kapucu, N., & Garayev, V. (2011). Collaborative Decision-Making in Emergency and Disaster Management. *International Journal of Public Administration*, *34*, 366–375. https://doi.org/10.1080/01900692.2011.561477

180. Curd, A., Vinnell, L., & Johnston, D. M. (2025). *Exploring the role of search and rescue non-government organisations in emergency events: A systematic review in Aotearoa New Zealand*. *Australian Journal of Emergency Management, 40*(1), 22–32. https://doi.org/10.47389/40.1.23

181. National Emergency Management Agency. (n.d.). *Who does what in an emergency*. Get Ready (New Zealand Civil Defence). Retrieved August 12, 2025, from https://getready.govt.nz/emergency/who-does-what-in-an-emergency

182. National Emergency Management Agency. (n.d.). *CDEM Sector*. Ministry of Civil Defence & Emergency Management, New Zealand. Retrieved August 13, 2025, from https://www.civildefence.govt.nz/cdem-sector

183. Bowen, J. (2022). *Canada must invest in a national civilian response unit*. Canadian Defence & Foreign Affairs Institute. Retrieved August 13, 2025, from https://cdainstitute.ca/canada-must-invest-in-a-national-civilian-response-unit//

184. House of Commons. (2024). *Providing aid to the civil power: Disaster relief and the Canadian Armed Forces' domestic operations* (Report of the Standing Committee on National Defence, 44th Parliament, 1st Session). Parliament of Canada.

185. Public Safety Canada. (2025). *Advancing a Pan-Canadian Civilian Response Capacity*. March 7,2025. https://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/2025-cvln-rspns/index-en.aspx

186. Incident Command System Canada. (n.d.). *About ICS Canada*. Retrieved August 12, 2025, from https://icscanada.ca/

187. Abiew, F. K. (2003). *From civil strife to civic society: NGO–military cooperation in peace operations* (Occasional Paper No. 39). The Norman Paterson School of International Affairs, Carleton University.

188. Lee, J. (2024). *The Canadian Armed Forces and Domestic Disaster Relief in the Context of Climate Change*. The Kingston Consortium on International Security (KCIS). April 30,2024. https://www.thekcis.org/publications/insights/insight-4-1

189. Liu, K., Yang, L., Zhao, Y., & Zhang, Z.-H. (2023). Multi-period stochastic programming for relief delivery considering evolving transportation network and temporary facility relocation/closure. *Transportation Research Part E: Logistics and Transportation Review*, *180*, 103357. https://doi.org/10.1016/j.tre.2023.103357

190. Nain, A., Jain, D., Gupta, S., & Kumar, A. (2023). Improving First Responders' Effectiveness in Post-Disaster Scenarios Through a Hybrid Framework for Damage Assessment and Prioritization. *Global Journal of Flexible Systems Management*. https://doi.org/10.1007/s40171-023-00346-z

191. Public Safety Canada. (2024). *Parliamentary Committee Notes: Supporting a Humanitarian Workforce to Respond to COVID-19 and Other Large-Scale Emergencies*. March 25, 2024. https://www.publicsafety.gc.ca/cnt/trnsprnc/brfng-mtrls/prlmntry-bndrs/20240322/12-en.aspx

192. Sledge, D., & Thomas, H. F. (2019). From Disaster Response to Community Recovery: Nongovernmental Entities, Government, and Public Health. *American Journal of Public Health*, *109*(3), 437–444. https://doi.org/10.2105/AJPH.2018.304895

193. Federal Office for Civil Protection FOCP. (2025). *Structure, command and management*. Swiss federal authorities. Retrieved August 12, 2025, from https://www.babs.admin.ch/en/structure-command-and-management

194. Bullock, J., Haddow, G., & Coppola, D. (2016). *Introduction to Emergency Management*. https://shop.elsevier.com/books/introduction-to-emergency-management/bullock/978-0-12-803064-6

195. Perry, R. W., & Lindell, M. K. (2006). *Emergency Planning - Perry, Ronald W.; Lindell, Michael K.: 9780471920779 - AbeBooks*. https://www.abebooks.com/9780471920779/Emergency-Planning-Perry-Ronald-Lindell-0471920770/plp

196. Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press. https://doi.org/10.1017/CBO9780511807763

197. Tierney, K. (2012). Disaster Governance: Social, Political, and Economic Dimensions. *Annual Review of Environment and Resources*, *37*(Volume 37, 2012), 341–363. https://doi.org/10.1146/annurev-environ-020911-095618

Appendix A: Certificate of Completion of TCPS 2: CORE



Appendix B: Ethics Approval From the University of Manitoba

University of Manitoba | Research Ethics and Compliance

Human Ethics - Fort Garry
208-194 Dafoe Road
Winnipeg, MB R3T 2N2
T: 204 474 8872
humanethics@umanitoba.ca

PROTOCOL APPROVAL

Effective: May 11, 2023 Expiry: May 10, 2024

Principal Investigator:	C Emdad Haque
Protocol Number:	HE2023-0080
Protocol Title:	*Canadian Defense and Security Network: Nature-triggered Emergency Response and Domestic Operations*

Andrea L Szwajcer, Chair, REB2

Research Ethics Board 2 has reviewed and approved the above research. The Human Ethics Office (HEO) is constituted and operates in accordance with the current *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*- TCPS 2 (2022).

This approval is subject to the following conditions:

i. Approval is granted for the research and purposes described in the protocol only.

ii. Any changes to the protocol or research materials must be approved by the HEO before implementation.

iii. Any deviations to the research or adverse events must be reported to the HEO immediately through an REB Event.

iv. This approval is valid for one year only. A Renewal Request must be submitted and approved prior to the above expiry date.

v. A Protocol Closure must be submitted to the HEO when the research is complete or if the research is terminated.

vi. The University of Manitoba may request to audit your research documentation to confirm compliance with this approved protocol, and with the UM *Ethics of Research Involving Humans*Ethics of Research Involving Humans policies and procedures.

Appendix C: Consent form for Key Information Interviews

UNIVERSITY OF MANITOBA

303-70 Dysart Road
Winnipeg, Manitoba
Canada R3T 2M6

Natural Resources Institute
Clayton H. Riddell Faculty of
Environment, Earth, and Resources

Research Project Title: Civil-Military Cooperation in Responding to Nature-Triggered Disasters: Understanding the Challenges and Opportunities in the Canadian Emergency Response Structure.

Principal Investigator and contact information: M. Sadman Sakib, MNRM student, Natural Resources Institute, University of Manitoba, Winnipeg, Manitoba, Canada, R3T 2N2. Phone: [redacted], email: sadmansm@myumanitoba.ca

Research Supervisor and contact information: Professor C. Emdad Haque, Professor, Natural Resources Institute, University of Manitoba, Winnipeg, Manitoba, Canada. Phone:[redacted] e-mail: cemdad.haque@umanitoba.ca

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Research Purpose

I am a graduate student at the University of Manitoba. The goal of this research is to understand how Canada's military is involved in domestic natural disasters. Specifically, the study aims to:

- Evaluate existing regulations and structures governing military involvement.
- Investigate past instances where the military was engaged in natural disasters.
- Discuss and explore policy options for better, sustainable military engagement in future disasters.

Time Commitment

Each one-on-one interview will take up an hour maximum. If we need more time, a second session will be arranged. These interviews will be semi-structured, allowing for open discussion while following a set of guiding questions.

Recording

If you provide your consent, the interview will be audio-recorded for accuracy. Video will not be captured. The audio will later be transcribed for analysis by the principal investigator.

Benefits and Risks
Participation is entirely voluntary. While there's no financial compensation, your contribution will be invaluable for policy improvement. Risks are minimal and akin to those encountered in daily life.

Privacy Measures
Your identity will remain confidential throughout the study. Any accidental disclosure of names during the interview will be promptly removed from the final transcript.

Withdrawal Option
You're free to withdraw from the study at any point without any repercussions. If you decide to withdraw, any data collected from you will be deleted. Please inform us by January 2024 if you wish to withdraw.

Results Sharing
The study's findings will be shared in academic conferences and journals. A final thesis will also be publicly available through the University of Manitoba's website.

Feedback and Validation
At the end of the interview, a summary of your contributions will be provided for your validation. If there are any discrepancies, you'll have the opportunity to correct them.
Please give a choice of mechanisms how you would like to receive the summary of findings:

☐ Sent to email address: _____

☐ Sent to the following address:_____

☐ Not interested to receive the summary of findings.

Given this, I would like to request you to sign this consent form which will indicate your willingness to participate in the study. I will shortly inform you about the time when the interview will take place. I will also send you a Zoom link through which the KII will be conducted.

Consent:

I am requesting you to indicate the following items that you agree with these.

☐ Yes ☐ No	I agree that the researcher can use the Zoom recorder to download the audio file for this KII.
☐ Yes ☐ No	I agree that the researcher may take notes during the interview.
☐ Yes ☐ No	I wish to get the primary findings of the study.
☐ Yes ☐ No	I agree that I have read out the full consent form and I have understood my rights to withdraw from the study.

☐ Yes ☐ No	I agree that I am participating in this study willingly.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Research Ethics Board at the University of Manitoba, Fort Garry campus. If you have any concerns or complaints about this project, you may contact any of the above-named persons or the Human Ethics Officer at 204-474-7122 or HumanEthics@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

Do you agree to participate in this research? Yes ☐ No ☐

---------- Provide for Signatures as Required: ----------

Participant's Signature: _____ Date: _____

Researcher and/or Delegate's Signature: _____ Date: _____

Appendix D: Consent form for Focus Group Discussions

UNIVERSITY OF MANITOBA

Natural Resources Institute
Clayton H. Riddell Faculty of
Environment, Earth, and Resources

303-70 Dysart Road
Winnipeg, Manitoba
Canada R3T 2M6

Research Project Title: Civil-Military Cooperation in Responding to Nature-Triggered Disasters: Understanding the Challenges and Opportunities in the Canadian Emergency Response Structure.

Principal Investigator and contact information: M. Sadman Sakib, MNRM student, Natural Resources Institute, University of Manitoba, Winnipeg, Manitoba, Canada, R3T 2N2. Phone: [redacted], email: sadmansm@myumanitoba.ca

Research Supervisor and contact information: Professor C. Emdad Haque, Professor, Natural Resources Institute, University of Manitoba, Winnipeg, Manitoba, Canada. Phone:[redacted] e-mail: cemdad.haque@umanitoba.ca

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Research Purpose

I am a graduate student at the University of Manitoba. The goal of this research is to understand how Canada's military is involved in domestic natural disasters. Specifically, the study aims to:

- Evaluate existing regulations and structures governing military involvement.
- Investigate past instances where the military was engaged in natural disasters.
- Discuss and explore policy options for better, sustainable military engagement in future disasters.

Time Commitment

Each one-on-one interview will take up an hour maximum. If we need more time, a second session will be arranged. These interviews will be semi-structured, allowing for open discussion while following a set of guiding questions.

Recording

If you provide your consent, the interview will be audio-recorded for accuracy. Video will not be captured. The audio will later be transcribed for analysis by the principal investigator.

Benefits and Risks
Participation is entirely voluntary. While there's no financial compensation, your contribution will be invaluable for policy improvement. Risks are minimal and akin to those encountered in daily life.

Privacy Measures
Your identity will remain confidential throughout the study. Any accidental disclosure of names during the interview will be promptly removed from the final transcript.

Withdrawal Option
You're free to withdraw from the study at any point without any repercussions. If you decide to withdraw, any data collected from you will be deleted. Please inform us by January 2024 if you wish to withdraw.

Results Sharing
The study's findings will be shared in academic conferences and journals. A final thesis will also be publicly available through the University of Manitoba's website.

Feedback and Validation
At the end of the interview, a summary of your contributions will be provided for your validation. If there are any discrepancies, you'll have the opportunity to correct them.
Please give a choice of mechanisms how you would like to receive the summary of findings:

☐ Sent to email address: _____

☐ Sent to the following address:_____

☐ Not interested to receive the summary of findings.

Given this, I would like to request you to sign this consent form which will indicate your willingness to participate in the study. I will shortly inform you about the time when the interview will take place. I will also send you a Zoom link through which the FGD will be conducted.

Consent:

I am requesting you to indicate the following items that you agree with these.

☐ Yes ☐ No	I agree that the researcher can use the Zoom recorder to download the audio file for this FGD.
☐ Yes ☐ No	I agree that the researcher may take notes during the interview.
☐ Yes ☐ No	I wish to get the primary findings of the study.

☐ Yes ☐ No	I agree that I have read out the full consent form and I have understood my rights to withdraw from the study.
☐ Yes ☐ No	I agree that I am participating in this study willingly.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Research Ethics Board at the University of Manitoba, Fort Garry campus. If you have any concerns or complaints about this project, you may contact any of the above-named persons or the Human Ethics Officer at 204-474-7122 or HumanEthics@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

Do you agree to participate in this research? Yes ☐ No ☐

---------- Provide for Signatures as Required: ----------

Participant's Signature: _____ Date: _____

Researcher and/or Delegate's Signature: _____ Date: _____

Appendix E: Interview guide for Key Informant Interviews

Participant type: Government employee/ NGO employee/ Academician/ Military personnel

Code:

Location of interview:

Date:

1. Do you think the Canadian institutional structure for engaging military in domestic nature-triggered disasters is adequate? What are the challenges in this institutional structure for engaging military in domestic nature-triggered disasters and how you would like to address them?
2. How do you decide or when do you decide to involve the military in domestic nature-triggered disasters? Or What are the considerations to involve military in domestic nature-triggered disasters? (For Government employee/ Academician/ Military personnel)
3. Could you please share any specific instances and their outcomes of engaging military in domestic nature-triggered disasters? or in your experience, what have been some successful examples of armed forces' involvement in nature-triggered disaster response? What were the challenges?
4. How do you define success of engaging military in domestic nature-triggered disasters? or What are the parameters where you would consider the engaging military in domestic nature-triggered disasters were successful?
5. What lessons have been learned from past experiences of armed forces' involvement in nature-triggered disasters? How have these lessons influenced the development of the institutional structure? (For Government employee/ Academician/ Military personnel) Do you think there should be changes in institutional structure? Tell me your perspective.
6. Tell me about the state of coordination between the armed forces and other stakeholders during a nature-triggered disaster response from your experience? and why?
7. In your opinion, what are the recommendations that should be considered to enhance the effective military-civil relationship structure for domestic response to nature-triggered disasters?
8. How can the experiences and expertise of non-governmental organizations (NGOs) be effectively integrated into the institutional structure for engaging military in domestic

disaster response? Do we need NGO? What are your comments on the statement of Canadian Redcross CEO Conrad Sauve on the recent interview on 2022 where he compared Canada's current approach to responding to emergencies to fighting a fire without any previous planning or preparation. Or Conrad Sauvé, president of the Canadian Red Cross, said that from a civil society point of view, Canada has been "caught unprepared" by natural disasters that require "rapid response, which the military has."

9. Do you believe there is a need for greater public awareness and understanding of the role and capabilities of the armed forces in responding to nature-triggered disasters? If so, how can this be achieved?
10. Are there any specific areas where you believe more research or analysis is needed to improve the Canadian institutional structure for engaging military during nature-triggered disasters?
11. Based on your expertise, what are your general thoughts or suggestions on how to achieve an effective military-civil relationship structure for domestic response to nature-triggered disasters in Canada?
12. Is there any additional information or insight you would like to share regarding the Canadian institutional structure for engaging military during nature-triggered disasters?
13. Currently Public safety Canada works as the Federal level agency which acts as a bridge between province and federal levels. But the Prime minister mentioned during the 2023 Ottawa wildfire that, “The federal government is studying options for creating a new national disaster response agency.” What are your thoughts about that in terms of engaging military in domestic nature-triggered disasters?

Appendix F: Interview guide for Focus Group Discussions

Code:

Location of interview:

Date:

1. How do you participate or what are the procedures of participation during any nature-triggered emergency?
2. In your opinion, what are the strengths of the existing institutional provisions regarding military involvement in domestic response to nature-triggered disasters?
3. What are the key challenges or weaknesses in the current institutional structure for engaging military in domestic disaster response?
4. Have you personally been involved in any nature-triggered disaster response efforts where armed forces were deployed? If yes, could you briefly share your experience?
5. From your experience, what are some of the most valuable lessons learned from the involvement of armed forces in nature-triggered disasters?
6. How effectively do you think the armed forces have been integrated into the overall response efforts during nature-triggered disasters?
7. In your opinion, what policy changes are necessary to enhance the effective military-civil relationship structure during domestic response to nature-triggered disasters?
8. What are the major concerns or considerations that need to be addressed when it comes to involving armed forces in domestic response to nature-triggered disasters?
9. How can the experiences and expertise of various organizations (e.g., military, civil authority, NGO, academia) and be effectively integrated into the institutional structure for engaging the military in domestic disaster response?
10. Do you think there is a need for greater public awareness and understanding of the role and capabilities of the armed forces in responding to nature-triggered disasters? If yes, how can this be achieved?
11. Are there any specific areas where you believe more research or analysis is needed to improve the Canadian institutional structure for engaging military during nature-triggered disasters?

12. What are your overall thoughts or suggestions on how to achieve a sustainable and effective military-civil relationship structure for domestic response to nature-triggered disasters in Canada?

Annex G: Themes Arising from Primary Data Sources

Theme	Sub-Theme	Sub-Sub-Theme
Effectiveness and Challenges of Current Military Engagement in Domestic Disaster Response	Operational Capabilities	Logistical expertise in disaster zones
		Rapid deployment capacity to affected areas
		Engineering and technical support for infrastructure repair
	Limitations and Risks	Unsustainable reliance on CAF for civilian tasks
		CAF designed for defence, not sustained domestic roles
		Resource and personnel strain over repeated deployments
	Procedural Ambiguity	Inconsistent Request for Assistance processes across provinces
		Delays in mobilization due to layered governance
		Unclear thresholds for military intervention
Coordination Dynamics with Other Stakeholders and NGOs	Intergovernmental Coordination	Jurisdictional ambiguities between levels of government
		Overlaps in roles and responsibilities
		Variations in provincial preparedness
	Civil-Military Communication	Differences in operational culture between agencies

		Command structure mismatches causing confusion
		Lack of shared and compatible information systems
	NGO Integration	Integration of NGOs into formal disaster plans
		Volunteer coordination and management
		Building trust between NGOs, military, and government
Perspectives on National Disaster Response and Institutional Changes	Civil-Military Role Boundaries	Risks of over-militarization of domestic disaster response
		Shaping public expectations of CAF involvement
		Maintaining the last-resort principle
	Comparative Lessons	Learning from the National Guard model in the USA
		Centralized command efficiency in New Zealand
		Intermediate disaster response forces as alternatives
Lessons Learned and Recommendations for Improvement	Policy Reforms	Clearer legal mandates for military in disaster response
		Defined cost-sharing arrangements between jurisdictions
		Streamlined Request for Assistance procedures
	Capacity Building	Joint training exercises involving all stakeholders

		Scenario-based multi-hazard exercises for readiness
		Investment in provincial and municipal preparedness
Broader Implications and Future Directions	Climate Change Impacts	Increased frequency and severity of disasters
		Geographic variability in climate-related risks
		Longer recovery times due to compounding hazards
	Building Resilience	Strengthening community-based disaster systems
		Reducing structural dependence on CAF
		Encouraging adaptive and flexible governance models