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DEFENCE AND CLIMATE CHANGE: A SHIFTING LANDSCAPE

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Solo Flight

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DEFENCE AND CLIMATE CHANGE: A SHIFTING LANDSCAPE

By Major Patricia Travers

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DEFENCE AND CLIMATE CHANGE: A SHIFTING LANDSCAPE

INTRODUCTION

Climate change impacts are known to have the potential to destabilize human life at all levels,¹ but a shift in the climate change narrative has occurred within the past two decades. Not only is climate change an accepted reality by the global majority, it is now being treated as an “evolving and multidimensional threat” posing risks to national security.² For numerous developed nations, this leaves the question as to what the military’s role is in addressing the threats deriving from climate change. In light of the severe consequences that climate change is set to bring upon Canada and the globe, this paper will argue that the Canadian Armed Forces (CAF) should be judiciously utilized in responding to domestic emergencies for two reasons. First, this will ensure the appropriate federal and provincial entities are prepared to fully act within their mandates, subsequently preventing overreliance on the CAF. Second, this will preserve the CAF’s abilities to perform the full spectrum of operations at home and abroad, proficiencies that must be maintained in a world increasingly affected by climate change.³ This paper will outline environmental effects of climate change on Canada and the world. From this, the impacts of climate change on conflict and security will be highlighted. Subsequently, the interplay between domestic emergency management organizations and Defence will be articulated. Finally, the potential consequences of overreliance will be outlined,

¹ Kate Guy et al. “A Security Threat Assessment of Global Climate Change: How Likely Warming Scenarios Indicate a Catastrophic Security Future.” *The Center for Climate and Security*, (Washington, DC. February 2020), 6.

² *Ibid.*

³ Department of National Defence, *Strong, Secure, Engaged: Canada’s Defence Policy* (Ottawa, 2017), 11: Full spectrum operations range from humanitarian assistance and disaster relief, to peacekeeping, to combat.

reiterating why domestic emergency management and response organizations must be able to respond to and mitigate domestic climate change effects.

But the best order of military battle will do little good in solving many of the problems on the bottom chessboard of non-state actors and transnational threats, such as pandemics or climate change, even though these issues can present threats to the security of millions of people on the order of magnitude of military threats that traditionally drive national strategies. Such issues will require cooperation, institutions, and pursuit of public goods from which all can benefit and none can be excluded.

- Joseph Nye, *Smart Power: The Future of Power*

ENVIRONMENTAL CONSEQUENCES OF CLIMATE CHANGE

In Canada

Ultimately the consequences of climate change for Canada will mean more emergencies and disasters as temperatures rise at an extreme rate. The past and future warming in Canada is double that of global warming, especially in the North.⁴ These warming effects will induce more extreme heat, less extreme cold, longer growing seasons, shorter snow and ice cover seasons, earlier spring peak stream flow, thinning glaciers, thawing permafrost, and rising sea levels.⁵ These shorter snow and ice cover seasons will affect fresh water availability, subsequently increasing the risk of water supply shortages in summer.⁶ Water availability affects everything from economic activities in agriculture to the health and welfare of citizens. In Ontario, weather anomalies like heat waves, floods, droughts, wind gusts are set to increase, which is

⁴ Government of Canada, *Canada's Changing Climate Report*, ed. by E. Bush and D.S. Lemmen (Ottawa, 2019), 5.

⁵ *Ibid.*

⁶ *Ibid.* With warmer winters and earlier snowmelts, there will be high winter streamflows, with smaller snowpacks and less glacier ice, leading to lower summer streamflows. Combined with warmer summers, this will increase the evaporation of surface water and therefore reduce water available during the summer despite more precipitation in certain places.

problematic given not only the population density, but also the political, military and economic centrality of the province.⁷

In addition, costly extreme weather and climate events have increased and there is no indication this trend will slow down.⁸ Daily extreme precipitation is projected to escalate the incidence of rain-generated local flooding, increasing urban flood risks.⁹ As well, storm surges have and will continue to produce extreme high water level events on all three of the coasts, causing flooding of infrastructure and habitat, along with erosion of coastlines.¹⁰ This coastal flooding will also increase because of simultaneous sea level rises.¹¹ Moreover, extreme, hot temperatures will become more intense and frequent, creating severe heat waves and increasing drought.¹² These higher temperatures will contribute to the risk of extreme fire weather across much of Canada.¹³ These environmental factors will converge and increase the demand on Canadian disaster and emergency response in the upcoming years.

On a Global Scale

The warming effects on Canada are not isolated, and the predicted consequences of climate change will disrupt the lives and livelihoods of millions around the world. In recent decades, climate change has caused impacts on “natural and human systems on all

⁷ Xiuquan Wang, Huang Guohe, Liu Jinliang Liu, Li Zhong, and Shan Zhao. "Ensemble Projections of Regional Climatic Changes Over Ontario, Canada." *Journal of Climate* 28, no. 18 (Sep 15, 2015): 2. <https://search.proquest.com/docview/1712481991?accountid=9867>.

⁸ Government of Canada, *Canada's Changing Climate Report*, ed. by E. Bush and D.S. Lemmen, 174.

⁹ *Ibid.*, 432.

¹⁰ *Ibid.*, 392: Three coasts includes Atlantic, Pacific, and Beaufort.

¹¹ *Ibid.*, 6.

¹² *Ibid.*, 5.

¹³ *Ibid.*, 431.

continents and across the oceans.”¹⁴ As per Figure 1 below, the impacts attributed to climate change span the entire globe. These effects range from glaciers melting to increased wildfire incidences to negative impacts on marine ecosystems and human food production. It should be noted that the intent of Figure 1 is to show the pervasiveness of climate change impacts around the world, rather than highlight the scientific rigour behind why climate change is attributable to human activity.

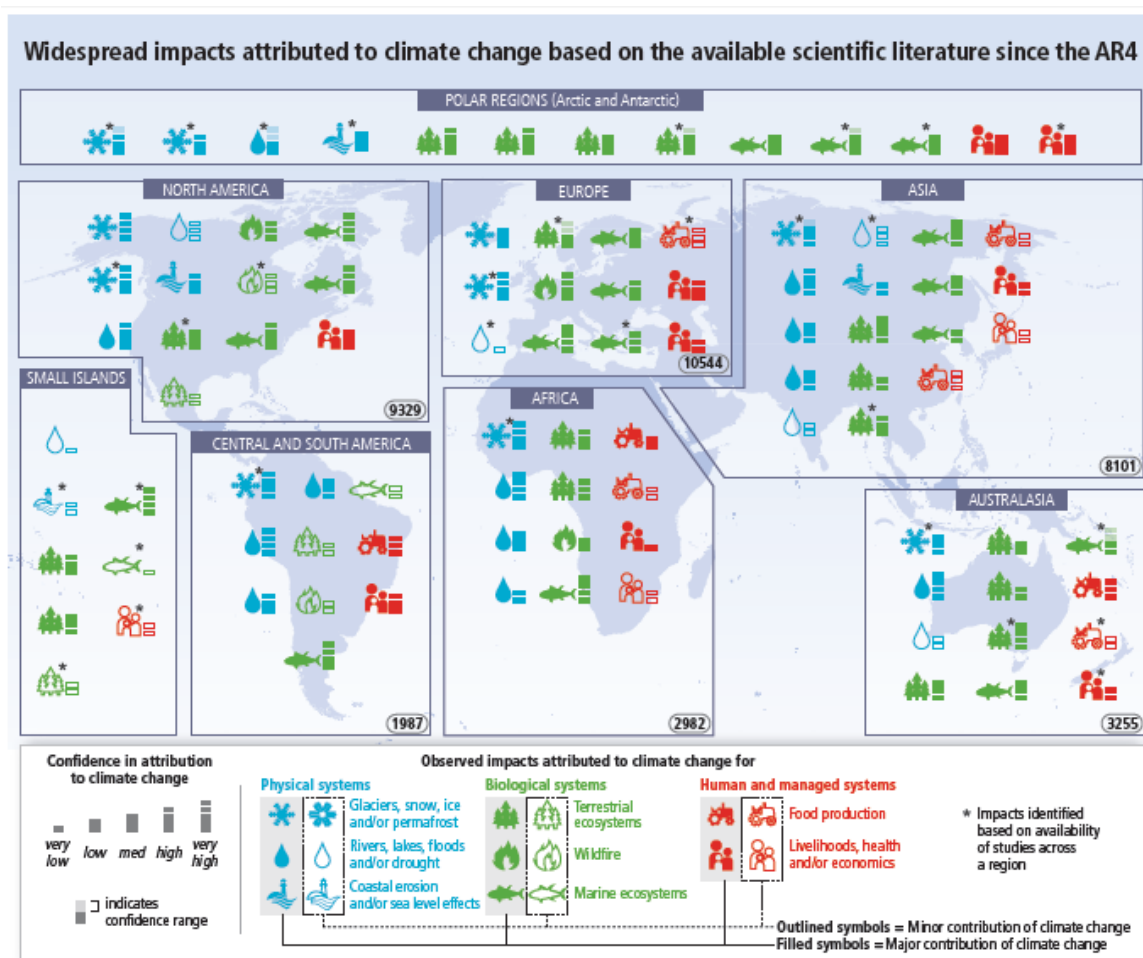


Figure 1 - - Impacts Attributed to Climate Change

Source: Intergovernmental Panel on Climate Change, *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report...* 7

¹⁴ Intergovernmental Panel on Climate Change, *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Geneva: IPCC), 6.

The consequences of climate change will proliferate as the continual emission of greenhouse gases are set to cause further temperature warming. This warming will create long-lasting changes in all components of the climate system, “increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems.”¹⁵ At this point, climate change can only be mitigated, not eliminated, with drastic and sustained reductions in greenhouse gas emissions.¹⁶ “Even at scenarios of low warming, each region of the world will face severe risks to national and global security in the next three decades.”¹⁷ The impacts of a changing global climate will lead to the security threats outlined below, inevitably affecting Canadian interests and security, and ultimately affecting the roles and requirements of the CAF.

The fundamental purpose of any military is to defend its country's people, sovereignty, and interests. To accomplish this, a military must prepare for domestic and expeditionary operations, including war. By doing so, the CAF is able to fulfil the broader national security and foreign policy objectives of the GoC.

- *Future Security Environment 2013-2040*, 85

A PERFECT STORM: CLIMATE CHANGE AND SECURITY THREATS

This next section will outline security factors resulting from climate change, setting the scene for further analysis on why the CAF must be prepared to conduct the full spectrum of operations. The aforementioned environmental shifts stemming from climate change are set to have serious impacts on the people inhabiting the planet. Growing resource constraints and rising competition over these resources may become regular features of this century's security environment.¹⁸ Species extinction of both

¹⁵ Intergovernmental Panel on Climate Change, *Climate Change 2014: Synthesis Report*.... 8.

¹⁶ *Ibid.*

¹⁷ Kate Guy et al., “A Security Threat Assessment of Global Climate Change: How Likely Warming Scenarios Indicate a Catastrophic Security Future,”... 6.

¹⁸ Paul Smith, “The Geopolitics of Climate Change: Power transitions, Conflict, and the Future of Military Activities,” *Conflict, Security, & Development* (11:3), 325.

animals and plants, marine eco-system collapses and therefore food production availability, coupled with freshwater availability, pose risks to many of the world's populations, especially vulnerable ones.¹⁹ Half of the world's population depend on local renewable resources for their livelihood, so these impending scarcities will have substantial security impacts on unprecedented scales.²⁰

Security, Safety, and Climate Change

The United Nations (UN) identified climatic variability and extremes as key forces behind the continued rise in global hunger, with protracted conflicts and economic slowdowns also playing major roles.²¹ For numerous parts of the developing world, their current living conditions are degrading as environmental scarcities in soil, water, and forests are worsening.²² Moreover, global safety and security indicators have decreased in the past decade, and the number of forcibly displaced people globally is at its highest point since the Second World War.²³

Susceptibility of Developing Nations

Climate change will specifically increase the insecurities and vulnerabilities of states that are currently weak or volatile, and exacerbate causes of tension.²⁴ Developing states are more vulnerable to climate change because they are suffering from persistent factors like

¹⁹ Intergovernmental Panel on Climate Change, *Climate Change 2014: Synthesis Report*.... 13

²⁰ Thomas F. Homer-Dixon, *Environment, Scarcity, and Violence* (Princeton, N.J.: Princeton University Press, 1999), 53,
<http://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=329679&site=ehost-live&scope=site>.

²¹ Melanie Newman, "Global Hunger Grows Amid Conflict and Climate Change," *BMJ : British Medical Journal (Online)* (Sep 12, 2018): 362.

²² Thomas F. Homer-Dixon, *Environment, Scarcity, and Violence* (Princeton, N.J.: Princeton University Press, 1999), 53,
<http://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=329679&site=ehost-live&scope=site>.

²³ Paul Corral, Alexander Irwin, Nandini Krishnan, Daniel Gerszon Mahler, and Tara Vishwanath. *Fragility and Conflict: On the Front Lines of the Fight against Poverty*. (Washington, DC: World Bank, 2020), 2: Defined as being within 25km.

²⁴ Department of National Defence, *Strong, Secure, Engaged: Canada's Defence Policy*, 52.

environmental degradation, reduced agricultural production; economic decline; weakening governance; population growth and displacement; and pervasive civil disruption.²⁵

Climate change will only exacerbate these factors.²⁶ In the regions of Sub-Saharan Africa, South Asia, and Latin America – representing 55% of the developing world’s population – climate change will push tens of millions towards intra-state migrations by 2050.²⁷

These dynamics are culminating globally and lay the foundation for amplified security issues that will invariably affect Canada’s security posture.

On Conflict

Poverty: The Kindling for Conflict

Climate change implications are forecasted by the World Bank to put another 100 million people into poverty by 2030.²⁸ In addition, many of the world’s most poor will be forced to migrate as the effects of climate change - ranging from crop production to water access to natural disaster frequency - intensify and change their environment.²⁹

In a cyclical fashion, conflict often leads to or exacerbates poverty. When social unrest leads to civil war, the destruction is pervasive and the effects are long term. As outlined below, the most severe consequences of conflict can be described from the perspective of civil wars leaving

²⁵ Francis Galgano, “The Environment-Conflict Nexus : Climate Change and the Emergent National Security Landscape,” *Advances in Military Geosciences* (Springer Nature, 2018): 2, <http://ebookcentral.proquest.com/lib/cfvlibrary-ebooks/detail.action?docID=5455200>.

²⁶ *Ibid.*

²⁷ Rigaud Kumari, Kanta, Alex de Sherbinin, Bryan Jones, Jonas Bergmann, Viviane Clement, Kayly Ober, Jacob Schewe, Susana Adamo, Brent McCusker, Silke Heuser, and Amelia Midgley. *Groundswell: Preparing for Internal Climate Migration* (Washington, DC: The World Bank, 2018) xix.

²⁸ World Bank, “Climate Change,; last modified 14 April 2020, <https://www.worldbank.org/en/topic/climatechange/overview>

²⁹ Stephane Hallegatte, Mook Bangalore, Laura Bonzanigo, Marianne Fay, Tamaro Kane, Ulf Narloch, Julie Rozenberg, David Treguer, and Adrien Vogt-Schilb, “Shock Waves: Managing the Impacts of Climate Change on Poverty,” *Climate Change and Development Series* (Washington, DC: World Bank, 2016), 161.

... in their wake devastated political and economic institutions ... and they result in large numbers of civilians killed, displaced, and traumatized. Societies emerging out of conflict usually suffer from reduced foreign investment, capital flight, and few employment opportunities... Civil wars also leave behind a more militarized economy, and military leaders, organizations, and combatants who have the experience, equipment, and often financial motives to continue violence, making restoring the rule of law more challenging.³⁰

This cycle of poverty and conflict, with continued marginalization from resource deprivation, is a contributing factor in susceptibility or vulnerability to societal malignancies such as violent, religious fanaticism.³¹ Though the causes of violent extremism vary, there is a solid indication from multiple studies that poverty and its associated social impacts are a key factor in people choosing this path.³² Ultimately, violent extremists and non-state actors are a security concern to Canada because of their ability to act unpredictably with little regard for borders, agreements, and international law.³³

Environment and Conflict

Historically, conflict has been “intrinsic to acquiring basic biological needs.”³⁴ As resource scarcity increases, the competition for these resources will naturally cause

³⁰ Agnieszka Paczynska, "Poverty and Conflict" in *The Oxford International Encyclopedia of Peace*, last accessed 19 April 2020, <https://www.oxfordreference.com/view/10.1093/acref/9780195334685.001.0001/acref-9780195334685-e-583>

³¹ Raj Bhala, “Poverty, Islamist Extremism, and the Debacle of Doha Round Counter-Terrorism. Part One of a Trilogy - Agricultural Tariffs and Subsidies,” *University of St. Thomas Law Journal*, Vol. 9, no. 1 (October 16, 2012): 15.

³² Siddik Ekici, “Countering Violent Extremism Among Youth: The Turkish Case,” *Countering Radicalisation and Violent Extremism among Youth to Prevent Terrorism*, ed. by Marco Lombardi et al, (IOS Press, 2015) 173..

³³ Department of National Defence, *Future Security Environment 2013-2040* (Ottawa, 2014), 29.

³⁴ James R Lee, *Climate Change and Armed Conflict : Hot and Cold Wars* (Taylor & Francis Group, 2009) 166., <http://ebookcentral.proquest.com/lib/cfvlibrary-ebooks/detail.action?docID=446867>.

conflict.³⁵ Extreme weather related events, such as droughts, have already been linked to conflict from the perspective of economic loss or erosion of government authority.³⁶ Eventually, the convergence of supply-induced, demand-induced and structural scarcities on cropland, water, forests and fish will constrain economic production to the detriment of local communities, regions, and nations.³⁷ As such, without serious mitigation, conflicts can be expected to increase in the wake of climate change from environmental factors alone.

Civil Unrest

The factors described above create conditions that can eventually cause social and civil unrest. Climate change will only aggravate factors, especially economic ones, that lead to societal turbulence. Typically people participate collectively in protests because of long term social, economic, and political stress.³⁸ Food price increases have been directly linked to civil unrest,³⁹ and these prices are currently on the rise.⁴⁰ Historically social unrest events span everything from civil wars to coups d'états, and have ended in the

³⁵ James R Lee, *Climate Change and Armed Conflict : Hot and Cold Wars* (Taylor & Francis Group, 2009) 166,. <http://ebookcentral.proquest.com/lib/cfvlibrary-ebooks/detail.action?docID=446867>.

³⁶ Judith Bretthauer, *Climate Change and Resource Conflict : The Role of Scarcity*. Routledge *Studies in Peace and Conflict Resolution* (Abingdon, Oxon: Routledge, 2017) 8, <http://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=1341368&site=ehost-live&scope=site>.

³⁷ Thomas F. Homer-Dixon, *Environment, Scarcity, and Violence* (Princeton, N.J.: Princeton University Press, 1999), 133, <http://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=329679&site=ehost-live&scope=site>.

³⁸ Ryan Baker and Joe Weinberg, "Let them eat cake: Food prices, domestic policy and social unrest," *Conflict Management and Peace Security*, Vol. 32, no. 3 (2015): 320.

³⁹ Ryan Baker and Joe Weinberg, "Let them eat cake: Food prices, domestic policy and social unrest," *Conflict Management and Peace Security*, Vol. 32, no. 3 (2015): 320.

⁴⁰ Food and Agricultural Organization of the United Nations, "Food Price Monitoring and Analysis – Regional Round Up," last accessed 19 April 2020, <http://www.fao.org/giews/food-prices/regional-roundups/en/>.

death of millions.⁴¹ Civil unrest in the world is another threat that can affect Canadian interests and security, from regional destabilization to the creation of mass migrants.

Violence and Desperation

Climate change will compound or cause issues of resource scarcity, ill equipped government responses, and forced migration of groups, including minorities.⁴² This often “paves the way for illicit actors working in terrorist groups” to profit on perceived state ineffectiveness.⁴³ An unstable, ineffective government body becomes a motivator for disillusioned youth to become violent, particularly when these aspects are combined with poor economic conditions and high youth unemployment.⁴⁴ These dynamics are borderless and transcend national or ethnic identities,⁴⁵ making Canada susceptible to these threats as well.

Syria paints a picture of how problems emanating from climate change can culminate in civil unrest and eventually violence. Despite its complexity, parts of the Syrian conflict can be linked to the drought that lasted for three years. Though drought has been an issue in the area previously, its severity and reoccurrence is worsening. Climate change has caused shifts in the quantity and distribution of rainfall, especially during growing seasons.⁴⁶ This led to forced migration for tens of thousands, malnourishment in children, and a requirement to use children for labour for extra

⁴¹ Dan Braha, “Global civil unrest: contagion, self-organization, and prediction,” *PloS one* Vol. 7, no. 10 (2012): 1, <https://search.proquest.com/docview/1326561637?accountid=9867>.

⁴²Valerio de Divitis, “Human Security: A Promising Concept to Address Terrorism- Related Threats,” *Countering Radicalisation and Violent Extremism among Youth to Prevent Terrorism*, ed. by Marco Lombardi, et al, Beaverton Vol. 3, no. 6 (Beaverton: Ringgold Inc, 2016): 51.

⁴³*Ibid.*

⁴⁴*Ibid.*

⁴⁵*Ibid.*

⁴⁶ Mahmoud Solh, “Tackling Drought in Syria,” *Nature Middle East*, last accessed 19 April 2020, <https://www.natureasia.com/en/nmiddleeast/article/10.1038/nmiddleeast.2010.206>.

income, instead of sending them to school.⁴⁷ These factors contributed to the civil uprising and response to the government's actions, and the implications of the war in Syria have touched Canada in multiple ways.

The CAF Nexus

Mass populations affected by resource scarcity, forced migration, and poverty will create a volatile landscape that will affect human security on an international scale. Cross border tensions caused by large-scale migrations, the increasing vulnerability of weak and failing states, and increased prevalence of disease are all anticipated to occur.⁴⁸ As governments become overrun with addressing the effects of climate change, their capacity to implement effective governance mechanism and policies related to human security will strain. Currently European governments are attempting to manage and cope with an influx of personnel seeking shelter from conflict and resource scarcity.⁴⁹ Eventually this will affect even more parts of the world, including the Western Hemisphere, as climate change scenarios forecast continued warming. Societies will need to be prepared to address the onslaught of issues posed by climate change. For Canada, this means the CAF must not be utilized in an all encompassing manner to address the anticipated increase in domestic disasters and emergencies, but rather maintain its unique abilities and roles, up to including combat operations.

If we become focused on solely humanitarian-assistance, disaster response, when the country really needs us, when the stakes are very high and we have to fight and we're not ready, that's going to cause casualties and it's going to cost loss of national interest.

⁴⁷ *Ibid.*

⁴⁸ Kurt M. Campbell, Jay Gullledge, J.R. McNeil, et al., *Age of Consequences: The Foreign Policy and National Security Implications of Global Climate Change*, Centre for Strategic and International Studies, November 2007, 6.

⁴⁹ Aryn Baker, "How Climate Change is Behind the Surge of Migrants to Europe," *Time*, last accessed 19 April 2020, <https://time.com/4024210/climate-change-migrants/>

- LGen Eyre, *Growing Natural Disaster Response Risks Dulling Army's Fighting Edge*

CLIMATE CHANGE, EMERGENCIES, AND SECURITY AT HOME

The aforementioned effects of climate change are impending for Canada and the world. Many documents on the subject of climate change and security outline the dire need for preparation in dealing with the imminent crises.⁵⁰ Some scholars predict that climate change is going to manifest as a military problem, using forces in new roles other than typical interstate relations and war.⁵¹ However, for Canada, the CAF must be prudently utilized in responding to domestic emergencies. Though the CAF is an instrument that the government may apply in almost any capacity it deems fit, the forecasted scope and severity of climate change consequences makes it critical that domestic entities are poised and resourced to act within their mandates. This will ensure the CAF maintains the ability to fulfill its core mandates along the full spectrum of operations, activities that no other organization can perform. Otherwise, an overwhelming domestic response demand on the CAF could erode both the proficiencies of emergency response organizations and the CAF's ability to conduct its niche roles, like warfighting and peace support.

National Security: Mandates, Roles and Relationships

National security is not solely a CAF mandate or responsibility. Canadian Security Intelligence Services, Public Safety, Public Health, The Royal Canadian Mounted Police, the Coast Guard, and Communications Security Establishment are but a

⁵⁰ Simon Dalby, *Security and Environmental Change*. (Cambridge: Polity Press, 2009), 147.

⁵¹ Paul Smith "The Geopolitics of Climate Change: Power transitions, Conflict, and the Future of Military Activities." *Conflict, Security, & Development* (11:3), 311.

few of the federal entities responsible in some capacity for national security.⁵² The primary organizations targeted for the scope of this paper are those involved in emergency management, disaster response, and public safety in Canada.

Canada's Domestic Emergency and Disaster Response

The *Emergency Management Act* is published under the Minister of Public Safety and Emergency Preparedness. The Minister is responsible to exercise leadership regarding emergency management activities in Canada by coordinating government institutions and in cooperation with the Provinces.⁵³ Chief among the Minister's responsibilities are coordinating the Government of Canada response to an emergency, coordinating the provision of assistance during a provincial emergency, and monitoring ongoing emergencies.⁵⁴ Within the Act, emergency management encompasses the "prevention and mitigation of, preparedness for, response to and recovery from emergencies."⁵⁵ An emergency management plan encompasses the following:

a program, arrangement or other measure a) for dealing with an emergency by the civil population; or b) for dealing with a civil emergency by the Canadian Forces in accordance with the National Defence Act.⁵⁶

As outlined in the joint document *Emergency Management Framework for Canada*, "each Federal, Provincial and Territorial government has a responsibility for emergency management and public safety."⁵⁷ The primary objective of emergency management is to "save lives, preserve the environment, and protect property and the

⁵² Canada, National Security and Defence, last accessed 19 April 2020, <https://www.canada.ca/en/services/defence.html>

⁵³ Canada. Emergency Management Act. S.C. 2007, c. 15, 5.

⁵⁴ *Ibid.*, 4.

⁵⁵ *Ibid.*

⁵⁶ *Ibid.*

⁵⁷ Ministers Responsible for Emergency Management. *Emergency Management Framework for Canada*, 3rd Edition. Ottawa. May 2017. 6.

economy” ultimately contributing to the safety, prosperity, and resilience the country.⁵⁸

Specific natural hazards and disasters related to emergency events include floods, hurricanes, storm surges, and forest fires.⁵⁹ In addition, biological hazards such as pandemics and disease or disruptions to critical infrastructure, like water supply, are also within the emergency management portfolio.⁶⁰

However, if resources are required above and beyond provincial or territorial capabilities, the federal government will respond to a Request for Assistance (RFA).⁶¹ Under the National Defence Act, CAF intervention or support can be requested through the federal government under the auspices of an RFA.⁶² The CAF responds to these asks in any capacity deemed fit by the government, as demonstrated with the COVID-19 pandemic, where Canadian Forces Base Trenton was utilized to quarantine people returning from various travels.⁶³

The CAF’s Mandates

Considering the mandated scope for Public Safety and entities charged with domestic emergency and disaster response, it is appropriate to delineate the CAF’s core missions. Under the new vision for the CAF is the very title of the defence policy: *Strong, Secure, Engaged* (henceforth known as SSE). Strong at home pertains to Canada’s sovereignty, Secure in North America applies to the continental defence, and Engaged in the world is where Canada contributes to stability through peace support operations or

⁵⁸ *Ibid.*, 7.

⁵⁹ *Ibid.*, 11.

⁶⁰ *Ibid.*

⁶¹ *Ibid.*, 10.

⁶² National Defence Act. R.S.C., c. N-5, s 273.6 (1).

⁶³ David Foot, “RELEASE: COVID-19 containment efforts working well at CFB Trenton,” *Quinte New*, 18 March 2020 <https://www.quintenews.com/2020/03/18/release-covid-19-containment-efforts-working-well-at-cfb-trenton/>.

peacekeeping.⁶⁴ The CAF's eight core missions span the requirement to defend, secure, and protect in accordance with SSE.

These missions and their position on the spectrum of military options, from Protect to Secure to Defend, are outlined in Figure 2 below.

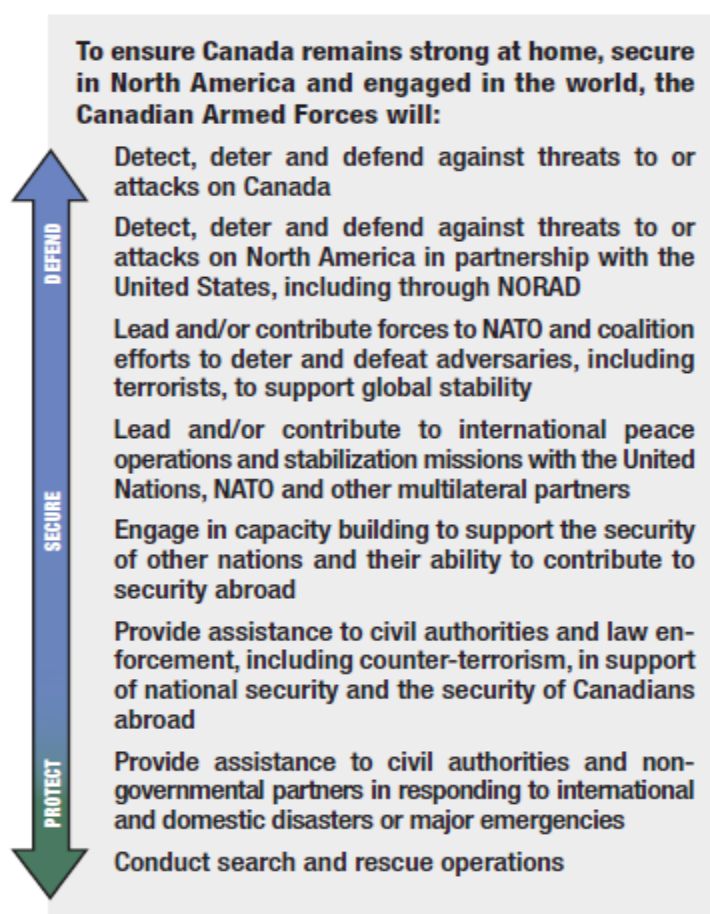


Figure 2 – 8 Core Missions

Source: Department of National Defence, *Strong, Secure, Engaged: Canada's Defence Policy*, 82.

On the defend side are traditional defence tasks, including working with Allies and partners to prevent adversaries from acting. If deterrence fails, the CAF must be prepared to engage in combat. Within the secure space are the contributions to international peace

⁶⁴ Department of National Defence, *Strong, Secure, Engaged: Canada's Defence Policy*, 14.

and security through operations with North Atlantic Treaty Organization (NATO) or the UN. On the protect side are the activities that the CAF conducts to support the government in responding to “emergencies in which immediate or prompt action is required to save lives and reduce human suffering.”⁶⁵ Although providing assistance to civil authorities in responding to domestic emergencies and disasters is a CAF core mandate, it cannot be at the expense of the ability to fulfill the other seven missions.

The CAF, SSE, and Climate Change

The forecasted consequences of climate change are articulated and reiterated in SSE. In addition to the security realities posed by climate change, there are additional issues contributing to a complex and unpredictable security environment. In order to succeed in this forecasted environment, the items in Figure 3 below must be attained.

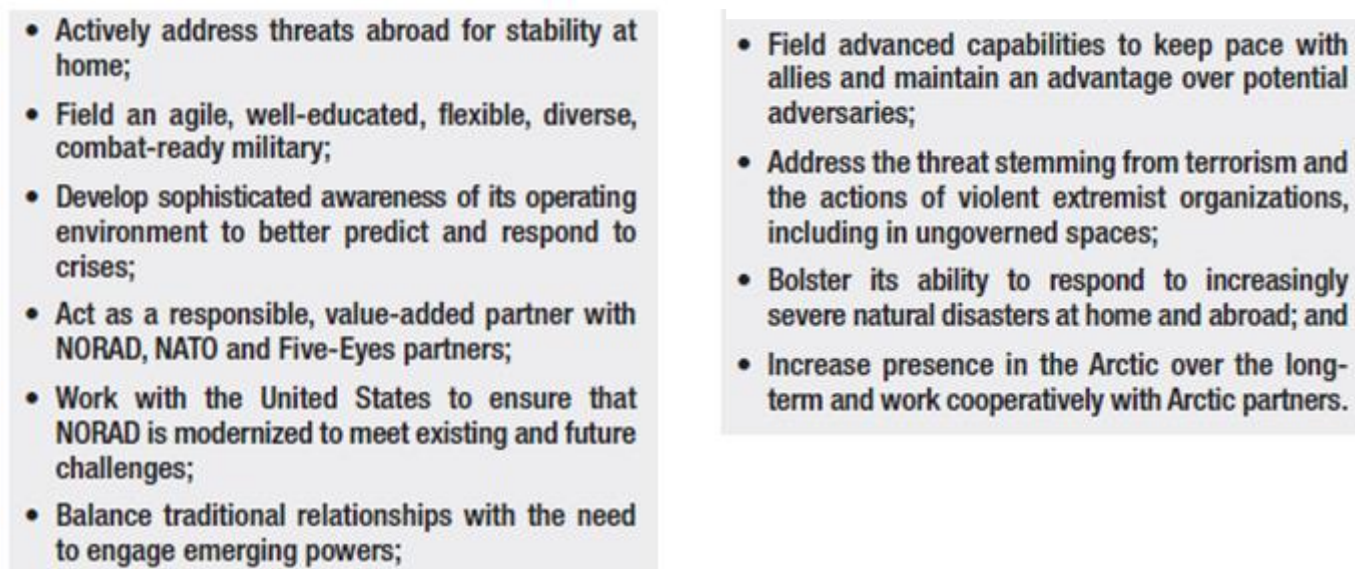
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- | | |
|---|--|
| <ul style="list-style-type: none"> • Actively address threats abroad for stability at home; • Field an agile, well-educated, flexible, diverse, combat-ready military; • Develop sophisticated awareness of its operating environment to better predict and respond to crises; • Act as a responsible, value-added partner with NORAD, NATO and Five-Eyes partners; • Work with the United States to ensure that NORAD is modernized to meet existing and future challenges; • Balance traditional relationships with the need to engage emerging powers; | <ul style="list-style-type: none"> • Field advanced capabilities to keep pace with allies and maintain an advantage over potential adversaries; • Address the threat stemming from terrorism and the actions of violent extremist organizations, including in ungoverned spaces; • Bolster its ability to respond to increasingly severe natural disasters at home and abroad; and • Increase presence in the Arctic over the long-term and work cooperatively with Arctic partners. |
|---|--|

Figure 3 -- Succeeding in a Complex and unpredictable security environment

Source: Department of National Defence, *Strong, Secure, Engaged: Canada's Defence Policy*, 14

⁶⁵ Ibid.

The ability to bolster the CAF's capacity to respond to increasingly severe natural disasters at home and abroad is listed as a requirement of Figure 3. However, to ensure the CAF is adequately prepared for the other activities required to succeed in the future operating environment, this should be carefully managed. The sheer volume of predicted disasters and emergencies for Canada behooves other entities responsible for emergency management to be prepared to fully embrace their roles. Combined with the security situation posed by climate change impacts at home and around the world, it is imperative that CAF does not become overwhelmed with domestic disaster response as it must be prepared to perform its core military missions.

Responses to Climate Change

In the previously outlined policy frameworks of *SSE* and the *Emergency Management Act*, the CAF is the supporting agency - not the supported - during domestic emergencies. Within the *Emergency Management Act*, the CAF is a supported organization only during war or armed conflict.⁶⁶ Under *SSE*, the CAF's role for Strong at home pertains to sovereignty and defence of the nation, touching on domestic emergencies only in severe cases. Public Safety primarily has the lead in a domestic context for emergencies, with the appropriate local and provincial or territorial organizations responding first. However, despite the aforementioned mandates of those responsible for emergency and disaster management, the trend indicates an increasing reliance on the CAF for domestic response.

The CAF's Use in Domestic Events

There has been a significant increase in RFAs for the CAF within the past decade, with 30 domestic Humanitarian Assistance Disaster Response (HADR) responses alone

⁶⁶ Canada. *Emergency Management Act*. S.C. 2007, c. 15, 7.

from 2011-2019 under Operation LENTUS.⁶⁷ Between 2010 and 2016, the CAF provided assistance on average once or twice annually.⁶⁸ However, in 2017 and 2018, there were six Operation LENTUS's alone in each year.⁶⁹ In 2019, the CAF had to assist New Brunswick, Nova Scotia, Ontario, and Quebec under Operation LETNUS.⁷⁰ Moreover, the CAF has seen a 1000 percent increase for RFAs to assist governments in supporting clean up after natural disasters in the past four years alone.⁷¹ Climate change experts state the consequences of warming temperatures and changing precipitation are major contributors to these demands.⁷²

The increased request for CAF assets under Operation LENTUS highlights that climate change is creating more emergencies and disasters, and the provinces are potentially unprepared in dealing with climate change consequences. Though the reasons for utilizing the CAF vary by province – including financial and political – discretion must be applied on how often the CAF is utilized for domestic response, especially as the trend for disasters and emergencies is only set to increase. If local, provincial, territorial and federal organizations are not prepared to manage the scope and frequency of the

⁶⁷ Department of National Defence, “Current Operations – Operation Lentus,” last accessed 2 May 2020, <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/current-operations/operation-lentus.html>.

⁶⁸ Department of National Defence, “Canadian Armed Forces Activities and Operations – Operation LENTUS,” last accessed 4 May 2020. <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/transition-materials/caf-operations-activities/2020/03/caf-ops-activities/op-lentus.html>

⁶⁹ *Ibid.*

⁷⁰ Department of National Defence, “Current Operations – Operation Lentus” last accessed 2 May 2020, <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/current-operations/operation-lentus.html>.

⁷¹ Murray Brewster, “The pandemic could end up changing everything — including the military,” *CBC News*, 26 April 2020, <https://www.cbc.ca/news/politics/pandemic-covid-coronavirus-military-canada-1.5544854>.

⁷² Department of National Defence, “Canadian Armed Forces Activities and Operations – Operation LENTUS,” last accessed 4 May 2020. <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/transition-materials/caf-operations-activities/2020/03/caf-ops-activities/op-lentus.html>

impending disasters and emergencies stemming from climate change, it will consume the CAF's resources and erode its capabilities to conduct activities at home and abroad across the full spectrum of operations. As will be highlighted below, this will pose significant problems for the nation.

Potential Consequences of Overuse

Traditional Military Roles

Increasing reliance upon the CAF for domestic disaster and emergency response will become problematic for a multitude of reasons. Foremost is the detracting from traditional military training and functions.⁷³ This detracting will come from the frequency of events occurring in Canada from climate change, and the ensuing reliance on the CAF to respond. This problem set has not gone unnoticed amongst senior leadership, emphasized recently by Lieutenant-General Eyre, the Canadian Army Commander. He stated that the CAF should be used as a tool of last resort for domestic HADR. Moreover, he highlighted that the growing tendency in using the CAF could prove dangerous as military personnel will be unprepared to conduct functional military roles, such as combat or stability operations.⁷⁴

Military Resources

Another reason increasing reliance on the CAF for domestic HADR is problematic is because it will strain limited resources. The resourcing constraints of the CAF are twofold: in personnel and in capabilities. Given the size of the CAF – which

⁷³ Paul Smith "The Geopolitics of Climate Change: Power transitions, Conflict, and the Future of Military Activities." *Conflict, Security, & Development* (11:3), 327.

⁷⁴ Adrian Wyld, "Disaster relief a threat to the Canadian army's fighting edge, commander says," National Post, 20 August 2019, <https://nationalpost.com/news/canada/disaster-relief-threatens-to-hinder-canadian-armys-readiness-for-combat-commander>. Accessed 2 April 2020.

comprises less than 1% of the nation's population⁷⁵ - and the nation's land mass, Canada's military force is limited. Even with the SSE goal of growing to 71,500⁷⁶ this may not address the demands placed on the organization when combined with the delta between Trained Effective Strength, attrition rates, parental leave, and those who have medical employment limitations. Moreover, though SSE attempts to address the need for improved capabilities, the capital acquisition plan spans 20 years.⁷⁷ As such, the ability to procure new or replacement capabilities are constrained by time, so fast solutions are not often available.

With these limitations in personnel and capabilities, the readiness levels of the environmental commands may become strained. For the Royal Canadian Air Force specifically, the 2017 Auditor General's "Evaluation of Air Force Readiness" found that the RCAF will continue to be affected by resource pressures in the future.⁷⁸ In addition, RCAF capabilities have increased significantly without parallel increase in personnel or baseline funding.⁷⁹ Though the Army and Navy have not been evaluated on their readiness in light of SSE, the reality is that as a smaller force, there are limits to the CAF's employment.

This resource reality places limitations on employment and consequently operational output. Currently, even when working with larger partners, the CAF can only deploy for limited periods of time. Extended commitments require a regeneration

⁷⁵ Statistics Canada, "Population Estimates – Quarterly," last accessed 22 April 2020, <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710000901>.

⁷⁶ Department of National Defence, *Strong, Secure, Engaged: Canada's Defence Policy*, 13.

⁷⁷ *Ibid.*, 43.

⁷⁸ Department of National Defence, Assistant Deputy Minister (Review Services), "Audit of Air Force Readiness," (October 2017), iv.

⁷⁹ *Ibid.*

period.⁸⁰ Thus the upsurge in use of CAF assets and personnel responding to domestic emergencies and disasters will eventually stress the commitments to continental defence and global engagement, the implications of which are discussed below.

Effects of Military Participation

An additional reason the growing use of the CAF for domestic HADR is concerning pertains to Canada's reliance on military participation in the global arena for national security. Canada's geographic and population size, limited military means, and proximity to the United States of America (U.S.A.) have driven military commitments and participation in multinational operations.⁸¹ Being an effective ally to the U.S.A. and NATO partners enables Canada to be a nation in good standing with its Allies.⁸² This status is one that Canada has historically depended upon for military security,⁸³ and still does today. As outlined in the *Pan-Domain Force Employment Concept*, the CAF cannot defeat adversarial aggression alone. As such, the CAF "must ensure our plans and preparations are tightly connected with those of our NATO and Five Eye allies as well as regional partners..."⁸⁴ Consequently the government's pledge to multinational, coalition activities and operations have implications to Canadian interests, and so it is paramount that the CAF is able to engage in the world.

⁸⁰ Aaron Ettinger and Jeffrey Rice, "Hell is Other People's Schedules: Canada's limited-term military commitments, 2001–2015," *International Journal*, Vol. 71, no. 3, (2016): 374.

⁸¹ *Ibid.*, 375.

⁸² *Ibid.*

⁸³ Alexander, David. "Canada's Dependence on Military Alliances: A Path for the Future." (Joint Command Staff Program Course Paper, Canadian Forces College, 2002), 6.

⁸⁴ Department of National Defence, *Pan-Domain Force Employment Concept*, (Ottawa 2019), 3.

As well, the CAF must also be able to contribute to collective security. Access to the global commons is critical for the Canada in terms of global trade and commerce.⁸⁵ Economics are tied with the free flow of goods and services, and it is in Canada's financial interests to maintain global stability.⁸⁶ Canada's willingness to partake in coalition operations can be partly attributed to the nature of Canadian interests abroad, and this obligation to partake in collective security.⁸⁷ These factors are key to economic and international prosperity, and means the CAF could be expected to assist in protecting the global commons.⁸⁸ Therefore, the CAF's ability to contribute on the world stage has economic, political, and diplomatic ramifications, and domestic emergency and disaster response should not detract from these key military engagements.

Canadian and American Defence

Furthermore, a growing reliance on the CAF for domestic HADR will become problematic if it diminishes the CAF's ability to contribute meaningful to continental defence. The *Future Security Environment 2013-2040* outlines that interoperability with core Allies will continue to be pivotal to Canadian national interests.⁸⁹ Sharing a border and close economic ties means the relationship with the U.S.A. is pivotal to Canada's national security and interests. It has been argued that in the face of the changing security environment brought about post 9/11, Canada's alliance within its own continent became

⁸⁵ Department of National Defence, *Future Security Environment 2013-2040* (Ottawa, 2014), 117.

⁸⁶ Riley Hennessey, "Toward a Larger Footprint: Interoperability In Pursuit of Influence," (Master's thesis, Dalhousie University, 2006), 102.

⁸⁷ *Ibid.*

⁸⁸ Department of National Defence, *Future Security Environment 2013-2040* (Ottawa, 2014), 118.

⁸⁹ Department of National Defence, *Future Security Environment 2013-2040* (Ottawa, 2014), 128.

even more critical.⁹⁰ It is probable that with the growing threats from climate change, the need to focus on continental defence will only become more applicable.

Participating meaningfully in the context of NORAD provides Canada a voice in bilateral interactions.⁹¹ This is critical as climate change presents its own set of issues to the Canada-U.S.A. relationship. Investing in this alliance during the forthcoming times of tension and resource strain could ensure mutual collaboration over critical issues. For instance, should the U.S.A. decide to divert water from the Great Lakes to compensate for water scarcity, there will be a serious clash of interests, as millions of Canadians rely on the Great Lakes watershed.⁹² In addition, the opening of the Northwest passage could create pressures which may translate into domestic issues that affect Canadian stability, especially when economic factors are included.⁹³ Canada must be prepared to fully participate and commit to NORAD and bilateral requirements, perhaps more than ever before.

On Ministers and Authorities Responsible for Emergency Management

The increased reliance on CAF assets to respond to domestic disasters and emergencies are problematic for the Ministers and provincial organizations responsible for emergency management as well. Continued reliance on the CAF will hamper the ability of these organizations to build business cases to procure necessary resources, resulting in the degradation of local, provincial and federal capabilities. Moreover,

⁹⁰ Alexander, David. "Canada's Dependence on Military Alliances: A Path for the Future." (Joint Command Staff Program Course Paper, Canadian Forces College, 2002), 6.

⁹¹ Riley Hennessey, "Toward a Larger Footprint: Interoperability In Pursuit of Influence," (Master's thesis, Dalhousie University, 2006), 91.

⁹² Kurt M. Campbell, Jay Gullledge, J.R. McNeil, et al., *Age of Consequences: The Foreign Policy and National Security Implications of Global Climate Change*, Centre for Strategic and International Studies, November 2007, 73.

⁹³ *Ibid.*, 74.

reliance on the CAF will impede the accumulation of disaster or emergency response experience and corporate knowledge, which takes years to build.

Ultimately, increased reliance on the CAF for domestic HADR affects the emergency response organizations own readiness levels and proficiencies. Even now, it seems provincial capabilities are already questionable. From 2017 to 2019, Quebec and New Brunswick each submitted RFAs at least once per year for floods and winter storms.⁹⁴ This trend is indicative that their emergency response competencies may be insufficient, given that many of the tasks - such as sandbag movement or wellness checks⁹⁵ – could have been done with appropriate planning or response by provincial authorities. If CAF resources become stretched thin from over reliance, and local, provincial, and federal authorities cannot adequately respond to domestic emergencies or disasters, then this will ultimately put Canadian lives in jeopardy. Therefore it is vital that entities charged with emergency and disaster management bolster their ability to respond to the growing threats stemming from climate change. This will ensure they meet their assigned mandates while preventing the CAF from becoming consumed with RFAs, compromising its ability participate in critical Defence-related activities.

Assistance Appropriately Placed

This is not to say that the CAF should not be utilized for severe domestic anomalies. In reality, climate change is set to impact military infrastructure, force readiness, military operations, and military strategy.⁹⁶ From this, a core mission in SSE is

⁹⁴ Department of National Defence, “Current Operations – Operation Lentus” last accessed 2 May 2020, <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/current-operations/operation-lentus.html>.

⁹⁵ *Ibid.*

⁹⁶ Steve Brock, Bastien Alex, Oliver-Leighton Barrett, et al. “The World Climate and Security Report 2020.” Expert Group of the International Military Council on Climate and Security. Published by the Centre for Climate and Security, an institute of the Council on Strategic Risks, February 2020. 4.

assistance to civil authorities during domestic emergencies. However, it is not the fact that the CAF is being increasingly requested for assistance that is problematic, but that domestic organizations seem unable to meet their fundamental mandates.⁹⁷

The COVID-19 pandemic is highlighting the growing use of the CAF for activities that should be within the scope of other federal or provincial authorities. With troops set to be utilized in senior homes for a myriad of activities, the concerns surrounding the use of the CAF for an activity so completely beyond its mandate has even been commented on by Prime Minister Justin Trudeau, who agrees soldiers should not be in the role of taking care of seniors.⁹⁸ Though the pandemic is unprecedented, it is highlighting the concerning trend for increasing demands on the CAF in supporting domestic emergencies when other organizations should be equipped and prepared to respond.⁹⁹ And this may not be an isolated incident, as increased disease proliferation is another unfortunate outcome of a warming climate.

With the predicted uptake in disasters and crises spurred on by climate change, the demand for domestic disaster and emergency response will inevitably grow. As such, provincial entities, Public Safety, and Ministers responsible for emergency management must prepare themselves as much as possible to act as the lead, supported agencies. If the CAF is not treated as the tool of last resort and becomes increasingly used to respond to these domestic HADR situations, it will eventually erode the CAF's ability to conduct

⁹⁷ MacDonald, Adam and Carter Vance. "COVID-19 AND THE CANADIAN ARMED FORCES: OVERVIEW, ANALYSIS, AND NEXT STEPS." CDA Institute, Vimy Paper 44. Last accessed 2 May 2020. <https://cdainstitute.ca/vimy-paper-44/>.

⁹⁸ Murray Brewster, "The pandemic could end up changing everything — including the military," *CBC News*, 26 April 2020, <https://www.cbc.ca/news/politics/pandemic-covid-coronavirus-military-canada-1.5544854>.

⁹⁹ MacDonald, Adam and Carter Vance. "COVID-19 AND THE CANADIAN ARMED FORCES: OVERVIEW, ANALYSIS, AND NEXT STEPS." CDA Institute, Vimy Paper 44. Last accessed 2 May 2020. <https://cdainstitute.ca/vimy-paper-44/>.

full spectrum operations. This has the potential to cascade into the other aspects of national interest that the CAF serves, essentially degrading Canada's security. The threat this poses to Canadian welfare, especially in light of the growing security issues stemming from climate change, cannot be understated.

COUNTERARGUMENTS

A central counter argument is that using the CAF for domestic HADR provides significant public relations and public image benefits, leading to credibility and positive association. This public support can translate into increased public pressure to better finance the CAF. Moreover, it is much more palatable from a political perspective to have soldiers assisting citizens during climate related emergencies upon the request of provinces than it is to have soldiers returning injured or deceased from combat related activities.

Furthermore, when the government has not pledged the CAF to contribute to a mission or operation, there is skill fade for all trades. Assisting in domestic emergencies and disaster response facilitates the practical application of proficiencies common to most deployments, such as communications procedures and supply delivery mechanisms. The real life use of these skill sets ensures certain trades, especially joint enablers, are better prepared to work in austere situations during conflict scenarios.

In reality, a failure to plan for worst-case scenarios in terms of climate change is equivalent to neglecting military institutional responsibility.¹⁰⁰ Yet this applies to all organizations responsible for national security, including Public Safety, Ministers responsible for emergency management, and provincial organizations. Within SSE, under the defence of Canada mandate and the protect spectrum of the CAF's core missions, the

¹⁰⁰ Simon Dalby, *Security and Environmental Change*,.149.

CAF has outlined where it will be the supporting entity in terms of domestic HADR. Ultimately resources are limited, so there is a cost to continually using the CAF for domestic roles that can be fulfilled by other organizations. In light of the forecasted number of climate change induced disasters, the precarious nature of the security landscape from a global perspective, and the requirement to appropriately maintain the CAF's ability to conduct full spectrum operations, using the CAF for domestic response must be carefully considered.

CONCLUSION

The consequences of climate change will be significant for Canada. Climate change is set to cause great upheaval on multiple fronts and on a global scale. The resulting sources of human insecurity, such as mass migration and violent extremism, are a threat to social and political stability and peace.¹⁰¹ These factors will have a direct impact on Canadian national security and interests, above and beyond the forecasted increase in domestic disasters and emergencies.

As this paper has highlighted, the CAF should be prudently employed in responding to domestic emergencies to ensure the appropriate federal and provincial entities are prepared to fulfill their roles. This will prevent misplaced reliance on the CAF, subsequently preserving the CAF's abilities to perform its niche military roles. As previously outlined, it is paramount the CAF is prepared to address a world irrevocably altered by climate change in order to uphold Canada's national interests. In the end this

¹⁰¹ *Countering Radicalisation and Violent Extremism among Youth to Prevent Terrorism*. Vol. 3. Beaverton: Ringgold Inc, 2016. <https://search.proquest.com/docview/1764225415?accountid=9867>. Pg 2

means the CAF must be able to conduct the full spectrum of operations, up to and including warfighting, to uphold its commitment to the safety and security of Canada and its citizens.

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