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## UNDERSTANDING THE EFFECTS OF CLIMATE CHANGE, MIGRATION, AND GENDER: THE RAMIFICATION FOR FUTURE CAF OPERATIONS

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## **UNDERSTANDING THE EFFECTS OF CLIMATE CHANGE, MIGRATION, AND GENDER ON FUTURE CAF OPERATIONS**

### **ABSTRACT**

Climate change is one of the greatest threats that humanity has ever encountered. It has been termed a “threat multiplier” given its ability to amplify conflict through the degradation of habitats and resources, which in turn leads to migration and increased conflict as people fight over dwindling resource availability. The consequences of climate change are real and effect each and everyone of us, albeit the effects differ greatly based on gender and location. Climate and its associated migration, stand to be one of the largest issues facing the global population in the near future. There is an estimated 143 million climate migrants expected worldwide by 2050.

This paper will seek to establish a linkage between climate change, migration, gender-dynamics and security, and demonstrate how these factors will be central to the operations of the Canadian Armed Forces and its allies in the not-so-distant future. The paper will demonstrate the necessity of considering cultural and gender differences in the planning of military operations to be able to develop effective plans that will address the root causes of conflict and migration. Finally, this paper will look to recommend ways in which the Canadian Armed Forces can better prepare itself for a future where operations will be closely linked to climate change and will require a robust capacity to conduct multiple operations spanning the full spectrum from Humanitarian and Disaster Relief to combat operations.

## INTRODUCTION AND LITERATURE REVIEW

Climate change has historically been a driving force on human migration since the earliest days of civilization. On one hand, populations have migrated towards areas with favourable climactic conditions and resources to establish settlements. On the other hand, major historical climate catastrophes have forced mass migrations and, in some cases, leading to the demise of civilizations. Poignant examples of this would include the fall of the Akkadian Empire in 2200 BC caused by the effects of a 100-year long period of drought and the disappearance of Viking Settlements in Greenland after 1400 BC due to their inability to cope with the Little Ice Age<sup>1</sup>.

While climate change has long shaped human history, human activity is now shaping the future of climate change. The rapid pace of industrialization in the preceding century has led to the creation of harmful climate effects, such as greenhouse gases, to a degree never seen before. The human generated greenhouse gas emissions have had, and are currently having, an amplifying effect on global warming and on the frequency and severity of extreme weather events<sup>2</sup>. Because of this increase in global warming and extreme weather events, climate-induced displacement is set to become a major humanitarian and security issue for all nations, including Canada. Canada, and its Armed Forces, must be prepared for the potential humanitarian and security challenges that climate-induced migration presents, both at home and abroad. While domestic security is the bailiwick of Provincial and Municipal governments, the Canadian Armed Forces (CAF) could be called upon to assist these levels of Government should the need

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<sup>1</sup> Ionesco, Dina, Daria Mokhnacheva, and François Gemenne. *The Atlas of Environmental Migration*. Taylor & Francis, 2016. P.8

<sup>2</sup> Huber, Daniel G., and Jay Gulledge. *Extreme weather and climate change: Understanding the link, managing the risk*. Arlington: Pew Center on Global Climate Change, 2011.

ever arise. However, given the limited supporting role the CAF would play domestically, this paper will focus solely on CAF-led international operations.

Climate-induced displacement is a real and existential problem facing the global community. In 2016, the United Nations High Commissioner for Refugees stated that “an annual average of 21.5 million people have been forcibly displaced by weather-related sudden onset hazards – such floods, storms, wildfires, extreme temperature – each year since 2008”<sup>3</sup>. The scientific community predicts that climate change will continue to increase the number of displaced persons around the globe, in turn causing greater rates of migration<sup>4</sup>. While extreme weather and climatic events affect all countries around the world, those most at-risk are countries that fall into the Least Developed Country (LDC), Land Locked Developing Country (LLDC), and Small Island Developing Country (SIDC) categories, with the International Organization for Migration (IOM) stating that “[t]hese countries are disproportionately affected by the negative impacts of climate change and are often least able to cope due to their structural constraints and geographical disadvantages. At the same time, they contribute the least to climate change”<sup>5</sup>.

In 2019, Canada released its updated defense policy known as “*Strong, Secure and Engaged*”, which acknowledges the gravity of the problem posed by climate change and climate-induced displacement stating that “climate change can also aggravate existing vulnerabilities, such as weak governance, and increase resource scarcity, which in turn heightens tensions and forces migrations”<sup>6</sup>. While this acknowledgement is an encouraging step, the CAF must now

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<sup>3</sup> United Nations, “Frequently asked questions on climate change and disaster displacement” last modified 06 Nov 2016, <https://www.unhcr.org/en-us/news/latest/2016/11/581f52dc4/frequently-asked-questions-climate-change-disaster-displacement.html>

<sup>4</sup> United Nations, “Migration and the climate crisis: the UN’s search for solutions,” last modified July 2019, <https://news.un.org/en/story/2019/07/1043551>

<sup>5</sup> Kerr, R. A. "ARCHAEOLOGY: Sea-Floor Dust shows Drought Felled Akkadian Empire." *Science* (American Association for the Advancement of Science) 279, no. 5349 (1998). P. 325

<sup>6</sup> Canadian Armed Forces. "Strong, Secure, Engaged: Canada's Defence Policy." Department of National Defense (2017). P.49

work to develop the necessary policies and strategies to respond to future climate driven emergencies and events around the globe. Climate change and extreme weather events can be unpredictable and devastating, injuring and displacing large numbers of people from their homes, and as leader within the global community the CAF must be prepared to respond quickly and effectively when these events arise.

While there is little debate about whether climate change has affected, and will continue to affect all global citizens, it is critical to acknowledge that the localized impact will vary across population groups. The consequences of climate change will not only be defined by borders and geographies, but also by socio-economic identities. For instance, there are recognized gender-based inequities, with women and girls more likely to suffer disproportionately from current climate trends than their male counterparts<sup>7</sup>.

The linkage between Climate Change, Migration, and Gender is a gap in knowledge that was recently identified in the recent United Nations report titled “Gender, Climate & Security: Sustaining inclusive peace on the front lines of Climate Change”<sup>8</sup>. This report identifies the critical consideration of gender when looking at climate and security problems as persons of different genders, located in different cultures around the world, will experience the effects of climate change differently<sup>9</sup>. As we understand that climate change can exacerbate existing divisions within a society, it can also widen the divide between genders, creating large power imbalances which can threaten the security of the more vulnerable. These security challenges can

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<sup>7</sup> Government of Canada. “Women and Climate Change”, last modified 10 April 2019.

<https://www.canada.ca/en/environment-climate-change/services/climate-change/women.html#toc0>

<sup>8</sup> Nagarajan, Chitra, Virginie Le Masson, Colette Benoudji, Sandra Sotelo Reyes, Marisa O. Ensor, Molly Kellogg, Maria Tanyag et al. "Gender, Climate & Security: Sustaining Inclusive Peace on the Frontlines of Climate Change." (2020).

<sup>9</sup> *Ibid.* P.10

be further exacerbated given the need for populations to migrate to avoid the worst effects of climate change. UN Secretary General Antonio Guterres stated that:

“The global threat of climate change and environmental degradation is poised to exacerbate the already increasing number of complex emergencies, which disproportionately affect women and girls. There is therefore an urgent need for better analysis and concrete, immediate actions to address the linkages between climate change and conflict from a gender perspective”<sup>10</sup>.

Mr. Guterres report highlights the clear and present need to consider gender-dynamics when addressing security challenges, as a lack of consideration will lead to solutions that are not inclusive and therefore not as likely to succeed.

Moving forward, the purpose of this paper will be to examine the disastrous consequences of the intersection between climate change, migration, and gender dynamics in global security and how these factors will be at the forefront of CAF international operations in the future. The first chapter will examine historical and current examples of climate-induced displacement and migration. It will further analyze the causes of climate-induced displacement to understand how it can lead to conflict and the creation of climate refugees so that the CAF can better define the problem that they and other allied nations will face in the future. While the CAF is well resourced to respond to Humanitarian and Disaster Relief (HADR) operations, understanding the location and scope of future challenges will provide an opportunity to examine future capabilities that may need to be acquired for the CAF to remain flexible and effective.

Next, this paper will examine some historical examples of the challenges posed by gender dynamics during conflicts. Today, as a society, we understand more clearly than ever that gender inequity is a problem that is systemic and global and is worsened by conflict. An analysis of these examples will help to better define the role gender dynamics plays in conflict to better

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<sup>10</sup> United Nations. “Women and peace and security: Report of the Secretary-General” United Nations Security Council (2019). S/2019/800.



understand the types of unique and challenging situations CAF commanders and their subordinates will face when deployed on future operations.

Finally, we will examine the interlinked nature of climate-induced displacement and migration and gender dynamics, and the dynamic humanitarian and security challenges that they pose for the CAF. Without significant action to slow or reverse climate change, the World Bank estimates that globally we could see “the number of internal climate migrants [...] reach more than 143 million by 2050”<sup>11</sup>, a prediction that underscores the urgency these issues pose for future CAF operations.

In closing, this paper will seek to provide a conceptual framework to assist the CAF in increasing its understanding of climate change and climate-induced migration. It will also provide an example of the theoretical future outcomes that would be possible, should CAF policy makers and educators work proactively to tackle these complex security challenges while accounting for gender-related insecurities during deployed operations.

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<sup>11</sup> Rigaud, Kanta Kumari, Alex de Sherbinin, Bryan Jones, Jonas Bergmann, Viviane Clement, Kayly Ober, Jacob Schewe et al. "Groundswell." (2018).P. xvii

## CHAPTER 1 – THE HISTORY OF CLIMATE CHANGE AND CLIMATE INDUCED DISPLACEMENT AND MIGRATION

### Introduction – Climate Science and Climatology

*“Antecedents of the concept of climate can be found in Greece in fifth century BC –  
Roger G. Barry<sup>12</sup>*

Ancient academics understood the importance of climate and the ways in which it influenced culture, agriculture, and regional security. They studied the patterns of seasonal change, local conditions, and locations of different climates to assist with agriculture planning and understanding the “occurrence of disease”<sup>13</sup> that would affect their populations. Climate science, or climatology, did not become a true discipline until the industrial revolution. The first known use of the word “climatology” appeared in 1813<sup>14</sup>, and the first acknowledgement of a climate-specialized researcher, a climatologist, appeared in the journal, *The Chemist* in 1852<sup>15</sup>. Thus, the direct and scientific systematic observation of the world’s climate and its changes have only been reported for approximately 150 years, with the quality of climate data shifting due to advances in technology throughout this period. Our modern understanding of climate change is even younger, with the first use of the term “greenhouse effect” attributed to John Henry Poynting in 1909<sup>16</sup>.

The purpose of highlighting this timeline is to acknowledge that much of the historical data that current climatologists and climate change specialists use is compared to models and

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<sup>12</sup> Barry, Roger G. 2013. “A Brief History of the Terms Climate and Climatology.” *International Journal of Climatology* 33 (5). P. 1317

<sup>13</sup> *Ibid.*

<sup>14</sup> *Ibid.*

<sup>15</sup> *Ibid.* P. 1318

<sup>16</sup> Poynting, J. H. "LXXIV. on Prof. Lowell's Method for Evaluating the Surface-Temperatures of the Planets; with an Attempt to Represent the Effect of Day and Night on the Temperature of the Earth." *The London, Edinburgh and Dublin Philosophical Magazine and Journal of Science* 14, no. 84 (1907). P.749

data that are imprecise and has been extrapolated or modelled using current technology to better understand how the climate of today compares to that of yesterday. It is also important to highlight the relative youth of climate science and how the knowledge may provide an alternate lens when examining major historical. For example, events such as the fall and extinction of ancient societies and empires because as Kerr notes “[when] civilizations collapse, the blame is often laid on the culture itself – leaders who overreacted, armies that faltered, farmers who degraded the land”<sup>17</sup>.

Moving forward, this chapter will examine the relationship between climate change and migration, here-in defined as climate-induced displacement due to the acknowledgment that the movement of people is not always cross-border and may also take place inside the borders of a nation state. We will further analyze the stressors of climate-induced displacement, how it in turn can lead to conflict, and the creation of climate refugees.

### **The Akkadian Empire**

The first example we will analyze is the fall of the Akkadian Empire in 2250 BC. Known as the First Empire in the history of humanity, a nation that ruled in Mesopotamia, or modern-day Iraq, spanning the length of the Euphrates River from the Persian Gulf in the south to the border with modern-day Turkey in the north<sup>18</sup>. At the time of its existence, the Akkadian Empire was the single largest, powerful, and complex nation on earth, made wealthy through agriculture

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<sup>17</sup> Kerr, R. A. "ARCHAEOLOGY: Sea-Floor Dust shows Drought Felled Akkadian Empire." *Science* (American Association for the Advancement of Science) 279, no. 5349 (1998). P. 325

<sup>18</sup> Gibbons, Ann. "How the Akkadian Empire was Hung Out to Dry." *Science* (American Association for the Advancement of Science) 261, no. 5124 (1993). P.985

and comprehensive long distance trade networks<sup>19</sup>. The empire's power peaked between 2300 and 2200 BC<sup>20</sup> after which it collapsed in its entirety within the span of 100 years.

For many years, historians theorized that the fall of Akkadia was due to external conflict with nomadic invaders or possibly internal conflict initiated by "restless provincial governors"<sup>21</sup> due to the magnitude and abrupt nature of that nation's collapse. In 1999, a team of scientists lead by Harvey Weiss conducted the first examination of the possible effects of climate change on the fall of the Akkadian Empire. By conducting excavations of ancient Akkadian settlements and conducting an analysis of the architecture, artifacts, flora, and fauna dated to that period, Weiss's team was able to determine that a large climate event had taken place and was potentially the root cause of the fall of the empire. In fact, Weiss stated that "[t]hese data define the major effects of an abrupt climate change at ~2200BC, namely imperial collapse, regional desertion, and large-scale population dislocation"<sup>22</sup>. His team's research further noted that this collapse took place despite the Akkadians having implemented several technologies to build resilience, such as sophisticated grain-storage and water-regulation<sup>23</sup> to combat against historical interannual droughts.

Weiss's theory that climate change contributed to the collapse of the Akkadian Empire was further studied and expanded upon by a team of scientists led by H. Cullen. In 2000,

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<sup>19</sup> Cullen, Heidi M., Peter B. deMenocal, Sidney Hemming, Gary Hemming, Frank H. Brown, Tom Guilderson, and Frank Sirocko. "Climate change and the collapse of the Akkadian empire: Evidence from the deep sea." *Geology* 28, no. 4 (2000). P. 379

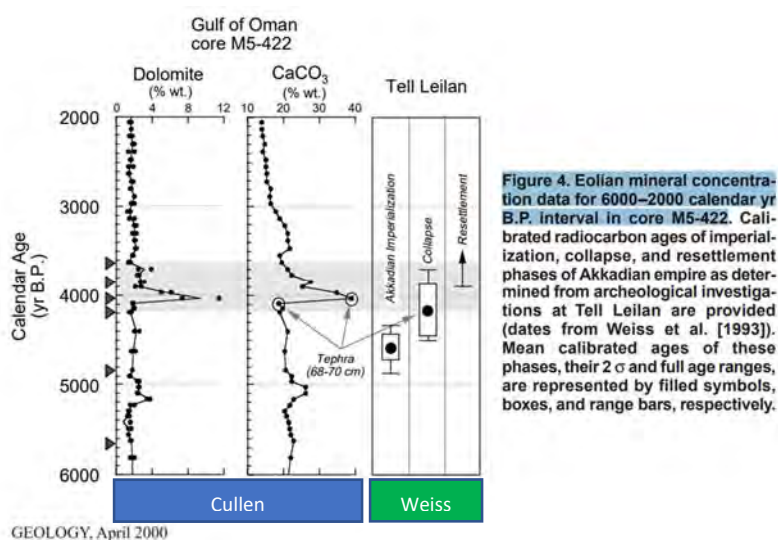
<sup>20</sup> Gibbons, Ann. "How the Akkadian Empire was Hung Out to Dry." *Science (American Association for the Advancement of Science)* 261, no. 5124 (1993). P.985

<sup>21</sup> *Ibid.*

<sup>22</sup> Weiss, H., M. -A Courty, W. Wetterstrom, F. Guichard, L. Senior, R. Meadow, and A. Curnow. "The Genesis and Collapse of Third Millennium North Mesopotamian Civilization." *Science (American Association for the Advancement of Science)* 261, no. 5124 (1993). P. 996

<sup>23</sup> Cullen, H. M., P. B. deMenocal, S. Hemming, G. Hemming, F. H. Brown, T. Guilderson, and F. Sirocko. "Climate Change and the Collapse of the Akkadian Empire; Evidence from the Deep Sea." *Geology (Boulder)* 28, no. 4 (2000). P.382

Cullen's team conducted an array of mineralogic and geochemical analyses of marine sediment cores from the Gulf of Oman to assess the possibility of a large climate event circa 2200 B.C. In their report, "*Climate change and the collapse of the Akkadian empire: Evidence from the deep sea*"<sup>24</sup>, they too concluded that climate change was likely the leading cause of the empire's downfall as their analysis of the sediment cores showed evidence of a "sudden onset of arid conditions in Mesopotamia"<sup>25</sup>.



**Figure 1 - Eolian mineral concentration data for 6000–2000 calendar yr B.P. interval in core M5-422**

Source: Cullen, "Climate change and the collapse of the Akkadian empire: Evidence from the deep sea", 381.

Figure 1 demonstrates the linkage between Weiss's and Cullen's research, both arriving at the conclusion of a major climatic event using distinct scientific methodologies. Cullen's research (highlighted in blue) denotes the percentage weight of dolomite and calcium carbonate ( $\text{CaCO}_3$ ) in his samples, an indicator of an aridification event. His data are situated directly

<sup>24</sup> Cullen, H. M., P. B. deMenocal, S. Hemming, G. Hemming, F. H. Brown, T. Guilderson, and F. Sirocko. "Climate Change and the Collapse of the Akkadian Empire; Evidence from the Deep Sea." *Geology* (Boulder) 28, no. 4 (2000). P.382

<sup>25</sup> *Ibid.* P. 382

opposite Weiss's archaeological data collected at Tell Leilan (highlighted in green) which detail the calibrated radiological ages of imperialization, collapse, and resettlement of the Akkadian Empire.

Both Weiss and Cullen further concluded that climate change and the associated drought likely led to a large internal migration of the empire's population. The rapid onset of arid conditions in the Empire affected regions differently. The North had a more rain-dependent agriculture and faced greater challenges with a shifting climate than the South, leading to massive southern internal migration<sup>26</sup> - people who in today's vocabulary would be considered 'climate refugees'.

The research conducted by Cullen and Weiss demonstrate the relative youth of climate change science, and how the discipline can significantly impact our understanding of the forces that have shaped the arc of human history. Their research has provided compelling evidence for a link between climate change and historic migrations, dating to the dawn of human civilization thousands of years ago. Further, their research is an abject demonstration of the abrupt and rapid nature that climate change can have on a society in just a 100-year span. The effects of climate change, as highlighted in the Akkadian Empire example, "were sufficient to destabilize the region and to fundamentally alter the social, political, and economic fabric of this once-unified culture"<sup>27</sup>.

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<sup>26</sup> Weiss, H., M. -A Courty, W. Wetterstrom, F. Guichard, L. Senior, R. Meadow, and A. Curnow. "The Genesis and Collapse of Third Millennium North Mesopotamian Civilization." *Science (American Association for the Advancement of Science)* 261, no. 5124 (1993): 995-1004

<sup>27</sup> Cullen, H. M., P. B. deMenocal, S. Hemming, G. Hemming, F. H. Brown, T. Guilderson, and F. Sirocko. "Climate Change and the Collapse of the Akkadian Empire; Evidence from the Deep Sea." *Geology (Boulder)* 28, no. 4 (2000). P.382

## Bangladesh

The second example we will analyze is Bangladesh and how climate change has led segments of the country's population to migrate to the Chittagong Hill Tracts (CHTs), located adjacent the country's border with India and Myanmar. To understand the modern conflict in the CHTs, a brief understanding of the country's history will be discussed.

Bangladesh is a low-lying country primarily located in the delta that is formed at the confluence of the Ganges, Meghna, and Brahmaputra rivers, and in 2021 continued to be classified as a Least Developed Country by the United Nations<sup>28</sup>. Originally part of the Dominion of India, during the partition of the British Raj in 1947 the Dominion of India was divided up into the two states – India and Pakistan. Bangladesh was incorporated as part of the newly formed country of Pakistan as East Pakistan. This partition of the British Raj was executed along religious lines, with Hindus being given India, and Muslims being given Pakistan as their newly formed homeland. However, the partition was poorly planned and included the mass transfer of populations between the newly created states which “led to an unprecedented mass displacement of people that stretched into the ensuing decades”<sup>29</sup>. Bangladesh, itself, achieved nation status in 1971 after a brief and bloody civil war with the Government of Pakistan, which led to its separation and independence. The partition of the British Raj was one of the largest forced migrations of the 20<sup>th</sup> Century, the social and political implications of which are still be felt today.

Located in present-day south-eastern Bangladesh, the CHTs are one of the only mountainous areas in a low-lying country that is prone to flooding. During the periods of British

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<sup>28</sup> United Nations. “Least Developed Country Category” last accessed 28 April 2021.

<https://www.un.org/development/desa/dpad/least-developed-country-category/ldcs-at-a-glance.html>

<sup>29</sup> Zamindar, Vazira Fazila-Yacoobali. "India–Pakistan Partition 1947 and forced migration." The Encyclopedia of Global Human Migration (2013). P.1

and Pakistani rule, restrictions were put in place to prohibit the migration of Bengali citizens to the CHTs, an area of the country that was predominantly non-Muslim<sup>30</sup>. However, once Bangladesh gained independence from Pakistan these restrictions were lifted, and successive governments instituted programmes to resettle Bengalis affected by climate change related disasters to the region<sup>31</sup>. This relocation resulted in approximately 500,000 people in total migrating to the CHTs. These government-resettled migrants were also joined by a significant number of climate refugees, people driven out of their homes in low lying areas due to “climatic events such as floods, cyclones, and riverbank erosion”<sup>32</sup>. The direct result of these migrations would be an increase in “the Bengali population share from 22% in 1974 to 49% in 1991”<sup>33</sup> in the CHTs.

To facilitate this migration of climate displaced persons, the Bengali government and Army delivered assistance by travelling to the CHT and provided the migrants with land, both common land and land seized from the indigenous residents of the CHTs<sup>34</sup>. The increased migration coupled with the reallocation of limited cultivable lands located in the CHT led to increased discord between the indigenous and Bengali populations<sup>35</sup>, as the indigenous population was forced to turn away from its traditional practice of shifting cultivation.

This discord came to a head in 1975 after the indigenous community requested that the pre-independence ban on migration be reinstated, a request that was refused by the Bangladeshi

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<sup>30</sup> Reuveny, Rafael. "Ecomigration and Violent Conflict: Case Studies and Public Policy Implications." *Human Ecology : An Interdisciplinary Journal* 36, no. 1 (2008). P.6

<sup>31</sup> Lee, Shin-wha. "Not a One-Time Event: Environmental Change, Ethnic Rivalry, and Violent Conflict in the Third World." *The Journal of Environment & Development* 6, no. 4 (1997). P. 385

<sup>32</sup> Islam, Rafiqul, Susanne Schech, and Udo Saikia. "Climate Change Events in the Bengali Migration to the Chittagong Hill Tracts (CHT) in Bangladesh." *Climate and Development* (2020). P.1

<sup>33</sup> *Ibid.*

<sup>34</sup> Lee, Shin-wha. "Not a One-Time Event: Environmental Change, Ethnic Rivalry, and Violent Conflict in the Third World." *The Journal of Environment & Development* 6, no. 4 (1997). P. 385

<sup>35</sup> Islam, Rafiqul, Susanne Schech, and Udo Saikia. "Climate Change Events in the Bengali Migration to the Chittagong Hill Tracts (CHT) in Bangladesh." *Climate and Development* (2020). P.6



Government and led to the beginning of anti-migration violence against Government forces and Bangladeshi migrants in 1985. Resentment on the part of the indigenous population towards migrants allowed them to set aside their own internal differences and brought them together under a common cause with the start of the Shanti Bahini insurgency<sup>36</sup>. The insurgency continued between the indigenous population and the Bengali population which was supported and armed by the Bangladeshi Army until a ceasefire was agreed in 1997<sup>37</sup>. However, due to a lack of inaction on the part of the government, violence continues to this day between the indigenous population and climate refugees moving to the area, thus further stressing the limited natural resources of the CHTs.

The Chittagong Hill Tracts provides a recent example of the nexus of climate change, climate-induced displacement, and conflict. It is a clear demonstration of how climate change and its associated extreme weather events have stressed the living environment of a modern population causing displacement and creating climate refugees. In this case, climate-forced migration has upset the delicate balance between available resources and inhabitants, causing resource scarcity which has further fueled localized and interregional conflict. With the predictable advancement of global warming, vulnerable populations like the Bengali's can expect further climate-induced displacement, migration, and related conflicts.

### **The South Pacific**

The final example we will analyse is that of the islands and atolls in the South Pacific region. This region is home to many nations whose populations "reside in coastal areas and rely

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<sup>36</sup> Lee, Shin-wha. "Not a One-Time Event: Environmental Change, Ethnic Rivalry, and Violent Conflict in the Third World." *The Journal of Environment & Development* 6, no. 4 (1997). P. 385

<sup>37</sup> Panday, Pranab Kumar and Ishtiaq Jamil. "Conflict in the Chittagong Hill Tracts of Bangladesh: An Unimplemented Accord and Continued Violence." *Asian Survey* 49, no. 6 (2009). P.1058

on natural resources for their livelihoods and well-being”<sup>38</sup>, putting them at significant risk of migration due to climate change and extreme weather events.

The people of the Carteret Islands, located in Papua-New Guinea, are one example of a population that is at high risk for displacement by climate change. The rapidly-advancing change in climate has caused a rise in sea levels, leading to the erosion of the Atoll’s coastline and habitable lands. John Connell, in his article, “*Last days in the Carteret Islands? Climate change, livelihoods and migration on coral atolls*” (2016), notes that the average sea level rise in the Carteret Islands is between 3 and 5mm per year<sup>39</sup> a concerning statistic given that the highest point on the islands is 1.5m. The climate-induced sea level rise and associated loss of habitable land became so dire that many forecast that the island chain would be completely underwater by as early as 2015<sup>40</sup>, although this prediction has yet to come to fruition. The government of Papua-New Guinea acted in 2009 by relocating the island’s population to Bougainville, one of the larger islands to the south, effectively turning the entire population of the Carteret Islands into climate refugees. This relocation effort proved difficult to complete; while land for homes on Bougainville had been donated by the Catholic Church, “finding sufficient land to sustain livelihoods has been difficult”<sup>41</sup>. This has led to much of the population remaining on the islands competing for an ever-dwindling supply of habitable land<sup>42</sup>.

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<sup>38</sup> Campbell, John, and Oliva Warrick. "Climate change and migration issues in the Pacific." PhD diss., United Nation Economic and Social Commission for Asia and the Pacific Office, 2014. P. 2

<sup>39</sup> Connell, John. "Last Days in the Carteret Islands? Climate Change, Livelihoods and Migration on Coral Atolls: Last Days in the Carteret Islands." *Asia Pacific Viewpoint* 57, no. 1 (2016).P.7

<sup>40</sup>*Ibid.* P.1

<sup>41</sup> Campbell, John, and Oliva Warrick. "Climate change and migration issues in the Pacific." PhD diss., United Nation Economic and Social Commission for Asia and the Pacific Pacific Office, 2014. P.28

<sup>42</sup> Connell, John. "Last Days in the Carteret Islands? Climate Change, Livelihoods and Migration on Coral Atolls: Last Days in the Carteret Islands." *Asia Pacific Viewpoint* 57, no. 1 (2016). P.11

Kiribati is another example of a small island nation located principally on atolls in the South Pacific, one that is identified as a LDC by the United Nations and is counted among the nations currently facing the “greatest potential migration pressures”<sup>43</sup> today. The island of South Tarawa, the location of the nation’s capital, has recently been subject to high internal migration and rapid urbanization. This has led to increased pollution and poor sanitation, compromising “the ability of the available freshwater resources and the land that sustain the communities that depend on them”<sup>44</sup>.

Recently, academics have also linked the migration within Kiribati to the effects of climate change and extreme weather events. For example, the southern Gilbert Islands have a lower average rainfall than other islands in Kiribati. This trend has been increasing, as droughts are lasting longer than historical norms, stressing the potable water supply on the islands and forcing residents to migrate<sup>45</sup>.

The country has also seen an increase in storm surges (“king tides”) from once or twice per year, to an average of five to eight surges per year. This is another clear indication of the effects of climate change, the results of which are the loss of habitable land, the possible contamination of the potable water supply, and increased migration to other, safer portions of the country<sup>46</sup>.

This analysis of nations in the South Pacific provides an example of countries currently at threat from climate-induced displacement. Kiribati and the Carteret Islands highlight the impact of climate change on finite resources such as potable water, habitable and arable land, and the

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<sup>43</sup> Campbell, John, and Oliva Warrick. "Climate change and migration issues in the Pacific." PhD diss., United Nation Economic and Social Commission for Asia and the Pacific Pacific Office, 2014. P.2

<sup>44</sup> *Ibid.* P.6

<sup>45</sup> Locke, Justin T. "Climate change-induced Migration in the Pacific Region: Sudden Crisis and long-term developments." *The Geographical Journal* 175, no. 3 (2009). P.175

<sup>46</sup> *Ibid.*

impact that migrants experiencing climate-induced displacement have on their chosen destination. With climate change expected to continue, the frequency and severity of climate-induced extreme weather events will increase, and low-lying nations in the South Pacific will become climate casualties with their populations being the first to join the expected 143 million climate migrants by 2050<sup>47</sup>.

These examples also highlight an impending crisis that the most developed and wealthy nations will be required to contend with in the future. The inherent costs associated with trying to solve this size of humanitarian crisis will be large, and the security implications will most likely stretch the resources of those nations that rise to the challenge.

### **Capabilities – Canadian Armed Forces**

The recently released Canadian defence policy, “*Strong, Secure and Engaged*”, highlights climate change and humanitarian crises as two major facts in Canadian defence planning moving into the future. The policy highlights several key CAF Humanitarian and Disaster Relief (HADR) capabilities, the Disaster Assistance Relief Team (DART) and the Royal Canadian Navy, as the key components of future international HADR response. The policy provides a commitment from the government for maintaining and investing in these capabilities, such as the acquisition of the Joint Support Ship, into the future to ensure the CAF remains capable and flexible in responding to climate change disasters.

The policy also highlights migration as a key security concern and acknowledges that climate change can lead to mass migration events and humanitarian emergencies, if not managed correctly. The analysis of the Akkadian, Bangladeshi, and South Pacific nation examples demonstrate that climate-induced extreme weather events have been unpredictable and

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<sup>47</sup> Rigaud, Kanta Kumari, Alex de Sherbinin, Bryan Jones, Jonas Bergmann, Viviane Clement, Kayly Ober, Jacob Schewe et al. "Groundswell." (2018).P. xvii

devastating, and research suggests that they will become more powerful into the future. With the likely theatre of operations being in low lying river deltas, or low-lying island nations, it will be important to consider the acquisition of future capabilities that will allow the CAF to operate in these areas effectively, such as a future amphibious capability to move support ashore or evacuate those on land, and a greater at-sea medical capability to ensure the Navy can provide the necessary support to injured climate displaced persons.

## **Conclusion**

Migration is central to the story of humankind, and has often been influenced by changes in climate. The examples of the Akkadian Empire, Bangladesh, and the nations of the South Pacific provide a broad cross section of modern and historic peoples displaced by climate change.

The Akkadian Empire has shown us that climate change has been a driver of migration since the days of the earliest empire, while Bangladesh is an example of how climate-induced displacement has led to conflict over stressed resources, and finally the nations of the South Pacific highlight the probable locations of those that will be affected first and most severely by climate change in the future.

This analysis can help the CAF and allied nations to better understand where they might be called in the future to provide HADR assistance to populations that have been driven from their homes and livelihoods by climate change. While the CAF is in possession of robust capabilities for HADR missions, the future will require the CAF to possess greater capability to operate in remote locations close to, or on the water, providing support to large groups of climate-induced displaced persons. This will require the CAF to continually monitor and update

its capability requirements and consider the acquisition of future capabilities to support large numbers of persons seeking medical assistance, or assistance in leaving the disaster zone.

## CHAPTER 2 – GENDER DYNAMICS CHALLENGES

### Introduction – Gender Dynamics and Security

*‘The global threat of climate change and environmental degradation is poised to exacerbate the already increasing number of complex emergencies, which disproportionately affect women and girls. There is therefore an urgent need for better analysis and concrete, immediate actions to address the linkages between climate change and conflict from a gender perspective.’ – António Manuel de Oliveira Guterres, UN Secretary General<sup>48</sup>*

The global community has acknowledged that conflict is experienced differently based on an individual’s gender identity. In 2000, the United Nation’s Security Council unanimously passed Resolution 1325 (UNSCR 1325) which highlights the impact of conflict on women and children, stating that they are “the vast majority of those adversely affected by armed conflict”<sup>49</sup>. It called on member nations to begin including women in decision-making at all levels, and for those nations involved in conflict, to ensure that the rights and dignity of women and children are always protected.

There can be no argument about the effects of conflict on women and children. However, to analyze the nexus between gender dynamics and security, it is critical that the reader have a clear understanding of today’s definition of *gender* and how the term has developed in recent years, as it has become “something made and remade in relation to a variety of complex relationships and processes”<sup>50</sup>. Gender is defined as “a set of culturally shaped and defined characteristics associated with masculinity and femininity”<sup>51</sup> and is not a static concept or label assigned to an individual, with power relations between different genders changing based on a multitude of factors, including economics and conflict.

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<sup>48</sup> Office of the United Nations Secretary General. *Report of the Secretary-General on Women and Peace and Security* (New York: UN Security Council, 2019), 35.

<sup>49</sup> United Nations, “Security Council Resolution 1325” United Nations Security Council (2000). 1

<sup>50</sup> Henry, Marsha. "Gender, Security and Development." *Conflict, Security & Development* 7, no. 1 (2007). P.64

<sup>51</sup> *Ibid.*

In 2018, a study conducted by the United Nations and the World Bank found “that high levels of gender inequality and gender-based violence in a society are associated with increased vulnerability to civil war and interstate war and the use of more severe forms of violence in conflict”<sup>52</sup>. The purpose of this chapter will be to analyse examples of security situations where gender dynamics were key considerations for security forces.

### **The Kosovo Crisis**

The first example we will analyze is the war in Kosovo, a conflict between the Albanian residents of the Province of Kosovo and the Yugoslavian and Serbian Governments beginning in March 1998 and continuing until a ceasefire was signed on June 13<sup>th</sup>, 1999<sup>53</sup>. The war in Kosovo provides a clear example of how gender dynamics were exploited and used as a war time tactic by an aggressor.

The use of sexual violence and the weaponization of gender was one of the pillars of the Serbian campaign to ethnically cleanse Kosovo with the ultimate goal of shifting the ethnic balance in favour of the Serbian minority.<sup>54</sup> In order to enact this strategy, the Serbian Government conducted a nationalist information operation in Kosovo, using various types of propaganda to dehumanize the Albanian population, which in essence “placed (them) outside the sphere of moral obligations regulating human relationships”<sup>55</sup> removing the social repercussions of sexual assault, enabling sexualized and gendered violence.

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<sup>52</sup> World Bank and United Nations, “Pathways for Peace: Inclusive Approaches to Preventing Violent Conflict” World Bank, (2018). P. xviii

<sup>53</sup> Di Lellio, Anna and Garentina Kraja. "Sexual Violence in the Kosovo Conflict: A Lesson for Myanmar and Other Ethnic Cleansing Campaigns." *International Politics* (Hague, Netherlands) (2020). P.155

<sup>54</sup> *Ibid.* P.148

<sup>55</sup> *Ibid.* P.155



The root causes of the war were two-fold: ethnic tensions between the Albanian and Serbian populations that can be linked back to the incorporation of Kosovo into Serbia in 1912<sup>56</sup>, and the beginning of the disintegration of Yugoslavia (at the time of the conflict, Kosovo was an autonomous Republic within the larger country of Yugoslavia).

When the annexation of Kosovo into Serbia occurred in 1912, Serbian nationalists, thanks to the efforts of the Serbian Orthodox Church, saw Kosovo's liberation as the restoration of a "holy place of the Serb Nation"<sup>57</sup> and the homeland of their medieval Christian ancestors<sup>58</sup>. However, at the time of its annexation in 1912, Kosovo was populated by an Islamic Albanian majority that were openly hostile to what they saw as the Serbian conquest of their land<sup>59</sup>. These competing views and the associated ethnic tensions have led to a campaign of persecution and government sponsored assimilation, which by 1945 had led to half of the arable land in Kosovo being in the hands of Serbian settlers<sup>60</sup>.

Over the intervening period between 1945 and 1998, this level of persecution against the majority Albanian population in Kosovo continued, with nationalism pervading the dialogues of both parties. This maltreatment intensified with the election of Slobodan Milosevic as President of Serbia, and finally as President of Yugoslavia in 1990, at which time he abolished the autonomous status of Kosovo and "effectively reduced the role of provincial governing bodies to approving the policies emanating from the Serbian Presidency and Parliament"<sup>61</sup>; Kosovars

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<sup>56</sup> *Ibid.* P. 154

<sup>57</sup> Independent International Commission on Kosovo. *The Kosovo Report : Conflict, International Response, Lessons Learned*. Oxford: OUP Oxford, 2000. P. 33

<sup>58</sup> Di Lellio, Anna and Garentina Kraja. "Sexual Violence in the Kosovo Conflict: A Lesson for Myanmar and Other Ethnic Cleansing Campaigns." *International Politics* (Hague, Netherlands) (2020). P.154

<sup>59</sup> Judah, Tim. *Kosovo: What Everyone Needs to Know*. New York;Oxford;: Oxford University Press, 2008. P. xix

<sup>60</sup> Independent International Commission on Kosovo. *The Kosovo Report : Conflict, International Response, Lessons Learned*. Oxford: OUP Oxford, 2000. P. 34.

<sup>61</sup> United Nations Minorities at Risk Project, "Chronology for Kosovo Albanians in Yugoslavia, 2004", accessed 18 April 2021. <https://www.refworld.org/docid/469f38f51e.html>

responded to this by electing a parallel government that would enact a “strategy of non-violence” in an effort to avoid all-out war with the Serbians and focus on passive resistance to continuing Serbian persecution.<sup>62</sup>

However, ordinary Kosovars began to lose patience with the strategy of passive resistance to Serbian persecution and its lack of progress, leading to the formation of groups determined to liberate Kosovo from Serbian dominance. One group, the Kosovo Liberation Army (KLA) began to undertake attacks against Serbian forces in Kosovo, with their first claimed attack being against a Serbian police officer in 1995<sup>63</sup>. This would signal the first in a series of attacks and reprisals between the KLA and Serbian Forces that would ultimately end in an all-out state of war in March 1995. The ensuing conflict, known as the Kosovo War, would be marked by the committing of atrocities against the ethnic Albanian population by Serbian and Yugoslavian forces, with sexual violence being “used in the plans of the Serbian state to persecute and destroy the Albanian population”<sup>64</sup>.

Miranda Alison, in her article, “*Wartime sexual violence: women’s human rights and questions of masculinity*”, notes that even prior to the commencement of the war in Kosovo, Serbian authorities had begun participating in a campaign of systemic rape against the Albanian population and that “[i]n the former Yugoslavia sexual atrocities communicated power and oppression, engendering terror in populaces under attack, and led to ‘ethnic cleansing’ through widespread flight”<sup>65</sup>. This activity was supported and encouraged by the Serbian leadership to

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<sup>62</sup> Independent International Commission on Kosovo. *The Kosovo Report : Conflict, International Response, Lessons Learned*. Oxford: OUP Oxford, 2000. P. 43

<sup>63</sup> *Ibid.* P. 51

<sup>64</sup> Di Lellio, Anna and Garentina Kraja. "Sexual Violence in the Kosovo Conflict: A Lesson for Myanmar and Other Ethnic Cleansing Campaigns." *International Politics* (Hague, Netherlands) (2020). P.152

<sup>65</sup> Alison, Miranda. "Wartime Sexual Violence: Women’s Human Rights and Questions of Masculinity." *Review of International Studies* 33, no. 1 (2007). P.86

support the wartime objective of ethnically cleansing Kosovo, with instances of rape and gang-rape increasing drastically with the commencement of open hostilities.

Further supporting the reprehensible actions of Serbian forces, were pervasive nationalist ideals within the Serbian public at large. These ideals normalized the concept that Serbian men were “expected to engage in socially sanctioned violence for the ‘good of the nation’ and their manhood”<sup>66</sup> allowed them to justify actions which would normally be seen as socially reprehensible and were combined with a national belief that women were expected to fulfill the maternal roles in society. This in turn led them to believe that the act of rape was in fact a national duty that would lead to offspring that, due to orthodox Christian beliefs, bore the sole ethnicity of their fathers.

The war in Kosovo ended with the full withdrawal of Serbian Forces from the province and their replacement by a NATO-led peacekeeping force, or Kosovo Force (KFOR). KFOR remains in place in Kosovo to this day, continuing to “maintain a safe and secure environment, freedom of movement for all citizens in Kosovo and to facilitate the Euro-Atlantic integration of the Western Balkans”<sup>67</sup>. In the years since the conflict, KFOR personnel have had to continue to combat against the ethnic violence in the province, while dealing with the aftermath of human rights violations and ethnic cleansing executed by the Serbian and Yugoslavian militaries.

The war in Kosovo is a recent example of the role that gender dynamics can play in conflict and security situations. The weaponization of gender by the Serbian and Yugoslavian governments to advance their agenda to cleanse Kosovo of its Albania population demonstrates the unique, dynamic, and enduring challenges that allied militaries may face in the future when

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<sup>66</sup> Alison, Miranda. "Wartime Sexual Violence: Women's Human Rights and Questions of Masculinity." *Review of International Studies* 33, no. 1 (2007). P.85

<sup>67</sup> North Atlantic Treaty Organization. "History" last accessed 26 April 2021. <https://jfcnaples.nato.int/kfor/about-us/history>

undertaking deployed operations around the globe. The KFOR is also an example of how allied militaries must be prepared to stay the course, as resolutions to conflicts that have experienced gender-based violence will not be quick due to their deeply damaging nature to the social fabric of a society. In the future, the CAF must understand that when responding to this type of crisis will require a substantial amount of time before the security situation in an affected nation will stabilize to a point that allows for the withdrawal of peacekeeping forces and the handover of security to local authorities.

### **Afghanistan – CAF Operations/Male Sexual Assault**

Canadian Armed Forces (CAF) involvement in the war in Afghanistan provides an opportunity to analyze the impact of gender dynamics on deployed personnel. The CAF deployed to Afghanistan in October 2001 as part of an international coalition representing the global community's response to the terrorist attacks on the World Trade Center on 11 September 2001. The CAF would remain in the country conducting operations until its withdrawal and handover of security responsibilities to the Afghan national authorities on 31 December 2014<sup>68</sup>. CAF operations in Afghanistan provide a Canadian example of the challenges that gender dynamics play for deployed military personnel and their commanders.

Throughout the period during which the CAF deployed military forces to participate in the War on Terror in Afghanistan, commanders at all levels were presented with unique and challenging ethical and moral situations. As is the norm, the deploying forces conducted intensive pre-deployment training which includes “Law of Armed Conflict training, CF Code of Conduct training, Rules of Engagement training and cultural training, all reinforced through a

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<sup>68</sup> Canadian Armed Forces. “The Canadian Armed Forces Legacy in Afghanistan “, Department of National Defence, last modified 21 September 2018. <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/recently-completed/canadian-armed-forces-legacy-afghanistan.html>

series of field training exercises”<sup>69</sup>. However, this did not adequately prepare them for the dilemmas that they would face caused by a culture clash rooted in gender dynamics.

The practice of Bacha Bazi, where poor families sell their sons to wealthy families, has been a part of Afghanistan’s culture for hundreds of years. Young Afghan boys, normally around the age of 8, are sold to wealthy families “for the use and pleasure of wealthy families”<sup>70</sup>. Once they are sold, and join their new family, they undergo a process by which their gender is destroyed, and they acquire a “new public androgynous perception in the Afghan cultural tradition”<sup>71</sup>. The purpose behind this gender reassignment is so that the young male can meet the sexual needs of not only the women in his new family, but also the men. The loss of gender allows for the men in the family to have sexual relations with the young male without being accused of a homosexual act, something considered to be a criminal act in their country.

Participating in the practice of Bacha Bazi is also widespread among the leadership of the Afghan National Security Forces (ANSF). Simone Borile notes that “a harem of boys represents not only high social status, but a clear sign of power and influence as well”<sup>72</sup>. The presence of these boys created complex dilemmas for allied personnel as they were generally aware of, and sometimes present, during sexual acts between the boys and the ANSF<sup>73</sup>. This resulted in CAF personnel and commanders being caught in a quandary caused by their own

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<sup>69</sup> Canadian Armed Forces. “Board of Inquiry – Allegation of assault of a civilian by Afghan National Security forces and the Canadian Forces response to such incidents (Redacted)” last accessed 04 May 2021. <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/board-inquiry/allegation-assault-civilian-afghan-national-security-forces-canadian-forces-response.html>

<sup>70</sup> Borile, Simone. “Bacha Bazi: Cultural Norms and Violence Against Poor Children in Afghanistan.” *International Review of Sociology* 29, no. 3 (2019). P. 498

<sup>71</sup> *Ibid.*

<sup>72</sup> *Ibid.* P. 502

<sup>73</sup> Canadian Armed Forces. “Board of Inquiry – Allegation of assault of a civilian by Afghan National Security forces and the Canadian Forces response to such incidents (Redacted)” last accessed 04 May 2021. <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/board-inquiry/allegation-assault-civilian-afghan-national-security-forces-canadian-forces-response.html>

training and professional conduct requirements, the gender dynamics of another culture, and the fear that taking action would irreparably harm relations between the ANSF and allied personnel.

A Canadian Board of Inquiry (BOI) into the sexual assault of minors by ANSF personnel was conducted in 2008 after widespread media reporting detailed how Canadian soldiers had been witness to the sexual assault of young Afghan males in theatre<sup>74</sup>. While the BOI found that CAF personnel had taken appropriate actions given the information that had been provided to them at the time, it did find that the CAF had not been adequately preparing deploying personnel for the culture and gender dynamics they would experience in theatre. Specifically, it had failed to adequately provide direction for personnel on the actions they were to take if they witness the sexual assault of a minor and had failed to adequately provide sufficient and up-to-date cultural sensitivity training. These steps would have provided deploying troops and commanders with a better understanding of the gender dynamics present in the local culture, which in-turn would have allowed them to better understand when, and if they should act<sup>75</sup>.

CAF operations during the War in Afghanistan provide a recent example of gender dynamics at play during deployed Canadian and allied operations and demonstrate how these dynamics can impact CAF personnel when deployed abroad. It emphasizes the necessity for deploying forces to be provided with robust and detailed training on the culture in which they will be immersed to help them make timely and culturally appropriate decisions. Furthermore, an in depth understanding of the cultural and gender dynamics of the area of operations will allow CAF planners and commanders to ensure that policies and procedures, such as standing orders

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<sup>74</sup> English, Allan. "Cultural Dissonance: Ethical Considerations from Afghanistan." *Canadian Foreign Policy Journal* 22, no. 2 (2016). P. 165

<sup>75</sup> Canadian Armed Forces. "Board of Inquiry – Allegation of assault of a civilian by Afghan National Security forces and the Canadian Forces response to such incidents (Redacted)" last accessed 04 May 2021. <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/board-inquiry/allegation-assault-civilian-afghan-national-security-forces-canadian-forces-response.html>

and rules of engagement, are designed to ensure CAF personnel have the freedom to act in culturally and legally appropriate ways. Finally, it is incumbent upon the CAF to ensure that the Government of Canada has the necessary state to state agreements in place before deploying personnel overseas. This will ensure that CAF members are capable of taking action whenever necessary, in a legal manner, and with the full support of local institutions.

## **Rwanda**

The Rwandan Genocide took place during a 100-day period in 1994 and has come to be termed “the twentieth century’s fastest genocide”<sup>76</sup>. The conflict was the culmination of years of ethnic tension between the country’s ethnic majority and minority and resulted in the massacre of “more than 800,000 Tutsi and moderate Hutu”<sup>77</sup>. Gender dynamics played a pivotal role in the Rwandan Genocide, with the use of rape by Hutus against Tutsis, as a primary means to ensure the ethnic cleansing of the country of the Tutsi minority by the Hutu majority.

The act that signalled the beginning of the Rwandan Civil War and resulting genocide can be traced back to the 6<sup>th</sup> of April 1994, when Rwandan President Juvenal Habyarimana’s plane was shot down near the capital of Kigali<sup>78</sup>. The root causes of the conflict, however, can be found more than one hundred years earlier in the beginning days of the Belgian Colonization of Rwanda. When the Belgians arrived in present day Rwanda, they found a society where “a central social and economic distinction was between farming and animal husbandry”<sup>79</sup>, with those involved in animal husbandry (Tutsi) occupying the higher social strata than those

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<sup>76</sup> Straus, Scott. *The Order of Genocide: Race, Power, and War in Rwanda*. Ithaca: Cornell University Press, 2006;2013. P. 41

<sup>77</sup> Russell, Susan Garnett, Sanaya Lim, Paul Kim, and Sophie Morse. "The Legacy of Gender-Based Violence and HIV/AIDS in the Postgenocide Era: Stories from Women in Rwanda." *Health Care for Women International* 37, no. 7 (2016). P. 723

<sup>78</sup> Hirschauer, Sabine, ProQuest ebook, and Ebook Library. *The Securitization of Rape: Women, War and Sexual Violence*. Houndmills, Basingstoke, Hampshire;New York, NY;: Palgrave Macmillan, 2014. P. 143

<sup>79</sup> Scott Straus. *The Order of Genocide : Race, Power, and War in Rwanda*. Ithaca: Cornell University Press, 2006. P. 20

involved in farming (Hutu). Interestingly, the possibility to move between the social strata existed. For example, should a farmer or Hutu acquire the ownership of animals, then they would have the ability to become a Tutsi.

When Belgian colonials arrived in the 1900's they found a well-established, orderly, and well-developed society. They were shocked to find a civilization this advanced in Africa and attributed it to a "superior race of natural born rulers", or the Tutsis<sup>80</sup>. In the years following the establishment of the Belgian Colony in Rwanda, colonial authorities would expand upon these differences making what was once a social status difference between individuals, an official ethnicity manufactured by the colonial authorities in order to govern the populace. The creation of an ethnic elite through which the Belgians could indirectly rule the country was formalized through the creation of "a racial identification card system, which distinctly identified Tutsis or Hutus with administrative rigor, based on specific physical features"<sup>81</sup> decided by the colonial government to be indicators of superior racial status. This identification system publicly entrenched the divide between Tutsis and Hutus leading to intermittent conflict between the two groups until the start of the Rwandan Genocide.

This ethnic division would be the catalyst for the Rwandan Civil War and the genocide that took place during it. It is also causally linked to the Hutu majority's use of gender-based violence, specifically rape, "as an organized weapon of war and ethnic cleansing by the Hutu militia groups"<sup>82</sup>. This campaign of sexual and gendered violence was supported and encouraged

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<sup>80</sup> Scott Straus. *The Order of Genocide: Race, Power, and War in Rwanda*. Ithaca: Cornell University Press, 2006. P. 20

<sup>81</sup> Hirschauer, Sabine, ProQuest ebook, and Ebook Library. *The Securitization of Rape: Women, War and Sexual Violence*. Houndmills, Basingstoke, Hampshire; New York, NY: Palgrave Macmillan, 2014. P. 142

<sup>82</sup> Russell, Susan Garnett, Sanaya Lim, Paul Kim, and Sophie Morse. "The Legacy of Gender-Based Violence and HIV/AIDS in the Postgenocide Era: Stories from Women in Rwanda." *Health Care for Women International* 37, no. 7 (2016). P. 723



by the Hutu majority through the portrayal of Tutsi women as predators seeking to steal the Hutu men, serving as “cover for mass rapes during the genocide”<sup>83</sup>.

The violence experienced by women during the Rwandan Genocide has had wide-ranging and long-lasting effects. While estimates differ, it is believed that during the genocide between 300,000 and 500,000 were raped, the majority of them being Tutsi women. Due to the stigmatization of rape, those assaulted during the conflict would end up hiding their victimization to avoid being ostracized by society and other negative consequences “such as loss of employment and limited political, civil, and property rights”<sup>84</sup>. Gender-based violence has left a lasting scar on the populace, creating unique security challenges for the new Rwandan Government as it coped with the repercussions of the civil war, and began efforts to heal the ethnic and gender divisions within the country.

The Rwandan Genocide is another example of the complex link between gender dynamics and security. The weaponization by men of rape against women is a classic example of a power structure within a specific society being exploited to further the goals of a specific subsection of the population. The long-lasting security effects of the Rwandan Genocide also demonstrate the difficult challenges that post-war governments and nations involved in peacekeeping have and will continue to face into the future.

## **Conclusion**

These examples provide a clear depiction of the consequences of war and violent conflicts on different genders and the various ways in which gender-dynamics can be used to

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<sup>83</sup> Hintjens, Helen M. "When Identity Becomes a Knife: Reflecting on the Genocide in Rwanda." *Ethnicities* 1, no. 1 (2001). P. 44

<sup>84</sup> Russell, Susan Garnett, Sanaya Lim, Paul Kim, and Sophie Morse. "The Legacy of Gender-Based Violence and HIV/AIDS in the Postgenocide Era: Stories from Women in Rwanda." *Health Care for Women International* 37, no. 7 (2016). P. 725

oppress, control, and eliminate entire populations. The Kosovo War and the Rwandan Genocide demonstrate the ability for gender to become a weapon of conflict, one that can be wielded to great effect, with devastating and long-lasting consequences. The female populations of Kosovo and Rwanda continue to live with, and be affected by, the ramifications of gender-based violence that was used against them during these conflicts. Given the incredibly personal and destructive nature of this type of violence, these women will continue to cope with these life altering consequences for the remainder of their lives.

The Afghanistan exemplifies how gender-based violence is not solely between the different genders, male and female, but also between sub-sets of the same gender. This example demonstrates the unique challenges that deploying Canadian and allied forces have, and will continue to face, while deployed and highlights the need for cultural and gender-sensitivity training for all members of the CAF who are sent abroad.

This analysis has helped to define the linkage between gender and security, and to highlight the unique challenges that gender dynamics have played for deployed forces. In 2019, the Chief of the Defence Staff released a Gender aide-memoire for integrating gender perspectives into Operational Planning for staff officers, a clear acknowledgment that future operations will need to consider the key role gender dynamics will play in mounting successful operations<sup>85</sup>. The CAF has also committed to using Gender Based Analysis Plus (GBA+) to understand when planning for a deployment overseas, how the affected nation and the crisis they are facing will affect different genders within the population<sup>86</sup>.

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<sup>85</sup> Canadian Armed Forces. "Integrating Gender Perspectives in Operations", Department of National Defence (2019)

<sup>86</sup> Canadian Armed Forces. "Thinking about gender in military planning and operations", last modified 25 July 2017, <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/conduct/gender-perspectives.html>

These are important steps forward that have been taken by the CAF in the realm of cultural and gender sensitivity. By having formal policies for the inclusion of gender and culture into planning and operations, CAF members will be better prepared for operations in areas around the world where culture and gender are viewed differently, sometimes in ways that are not compatible with those of Canadians. This will hopefully ensure that CAF members and commanders never again find themselves deployed overseas confronting complex situations they are not able to combat.

## CHAPTER 3 – CLIMATE CHANGE, MIGRATION, GENDER, AND SECURITY – THE SECURITY CHALLENGE OF THE FUTURE

Throughout this paper, it has been demonstrated that there are undeniable linkages between Climate Change and Migration, and between Gender Dynamics and Security. The United Nations recent report “Gender, Climate & Security: Sustaining inclusive peace on the front lines of Climate Change” has highlighted that gender, climate and security are also interlinked but that there is a lack of research and therefore poor understanding of this important topic<sup>87</sup>.

Climate-change has become a threat multiplier exacerbating economic, social and security problems around the globe. The possibility that climate change will further increase global conflict is high, as is the likelihood that both climate events and conflict will precipitate population displacement. There is significant risk that extant gender dynamics within populations will become intensified within the displaced populations leading to greater inequity, feeding forward to create an even greater degree of conflict.

The purpose of this final chapter will be to explore the linkages amongst climate change, migration, gender dynamics and security. The chapter will also demonstrate that this nexus will provide the most pressing security challenges facing the CAF and allied militaries in the future and will analyze the readiness of the Canadian Armed Forces to respond to this unique and dynamic problem set.

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<sup>87</sup> Nagarajan, Chitra, Virginie Le Masson, Colette Benoudji, Sandra Sotelo Reyes, Marisa O. Ensor, Molly Kellogg, Maria Tanyag et al. "Gender, Climate & Security: Sustaining Inclusive Peace on the Frontlines of Climate Change." (2020)

## The Nexus – Case Studies

Climate change is now the single largest crisis that humankind has ever faced, playing an amplifying role in conflicts and crises around the globe. The United Nations migration agency, the International Organization for Migration, highlighted this in its 2020 Migration Report by stating that “the dynamics and pace of climate change indicate that disruptions ranging from extreme weather events to large scale changes in ecosystems are occurring at a pace and intensity unlike any other known period of time on Earth”<sup>88</sup>.

This rapid increase in climate change induced extreme weather events will in turn increase the number of climate-displaced persons from areas at risk from these types of events leading to increased internal and external migration. This trend is a major global issue with the United Nations reporting that “[a]n annual average of 21.5 million people have been forcibly displaced by weather-related sudden onset hazards – such as floods, storms, wildfires, extreme temperature – each year since 2008”<sup>89</sup>.

In countries where governance is crumbling or non-existent, the effects of climate change can further aggravate economic, political, and social stresses increasing tensions within the country leading to conflict and greater population displacement. The effects of this increased displacement will be experienced differently based on gender as “many migrants in transit are exposed to sexual and gender-based violence”<sup>90</sup>. While gender insecurity is not solely indicative of sexual and gender-based violence, it is the worst possible outcome and the one that must be at

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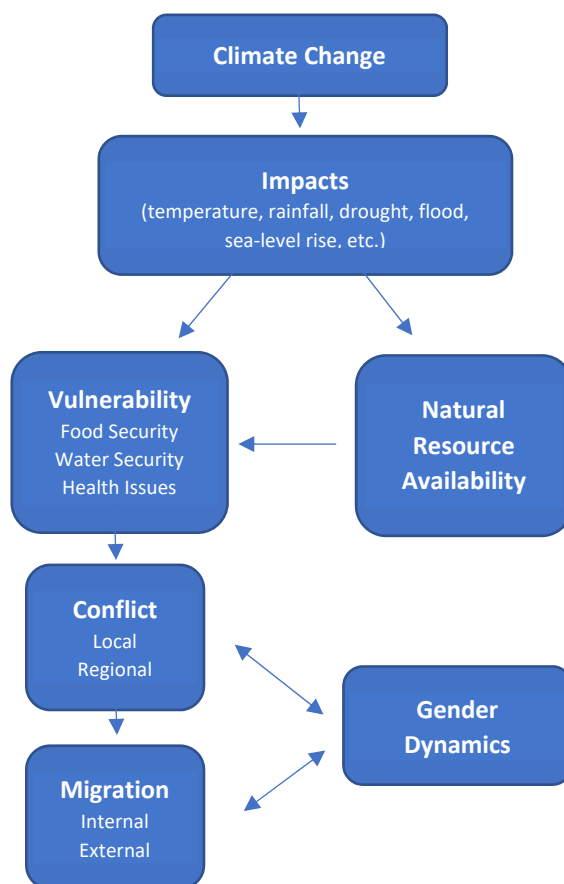
<sup>88</sup> McAuliffe, Marie, Binod Khadria, and Céline Bauloz. World migration report 2020. IOM, 2019. P.253

<sup>89</sup> United Nations High Commission for Refugees, “Frequently asked questions on climate change and disaster displacement,” last modified 06 Nov 2016, <https://www.unhcr.org/en-us/news/latest/2016/11/581f52dc4/frequently-asked-questions-climate-change-disaster-displacement.html>

<sup>90</sup> McAuliffe, Marie, Binod Khadria, and Céline Bauloz. World migration report 2020. IOM, 2019. P. 68

the top of mind when considering the nexus of climate change, migration, security, and gender dynamics.

### *Conceptual Framework*



**Figure 2 – Conceptual Framework “The NEXUS”**

This conceptual framework has been modified for the purposes of this paper from one constructed by the United Nations Environment Programme that was used to study the Sahel in their report "*Livelihood Security, Climate Change, Migration and Conflict*"<sup>91</sup>. It has been further

<sup>91</sup> United Nations Environment Program. *Livelihood Security: Climate Change, Migration and Conflict in the Sahel*, 2012. P.14

modified from the original to focus solely on the migration outcome, with gender dynamics being added as an overarching influencer of conflict and migration.

The creation of this conceptual framework is the culmination of the previous two chapters of this paper and has been developed to display the linkages between climate change, migration, security, and gender dynamics. This framework will set the basis for three case studies of ongoing crises in Chad, the Sudan and West Papua, Indonesia. Examining these cases will help to demonstrate how these factors interplay to create unique and dynamic security challenges, and will assist in framing the environment in which the CAF will operate in future years.

### *Lake Chad Region – Case Study 1*

The Lake Chad Region is a strong example of the linkage between climate change, migration, security, and gender dynamics. Home to Africa’s fourth largest freshwater lake, it is responsible for supporting over “30 million people living along its shores in Chad, Cameroon, Nigeria and Niger but also in other neighbouring countries”<sup>92</sup>. It is also the center of a pressing humanitarian crisis caused by the effects of climate change and an ongoing Islamist insurgency led by the group, Boko Haram.<sup>93</sup>

The effects of climate change, in the form of recurring droughts and increased desertification, and a lack of sustainable water management practises have caused Lake Chad to lose “about 90% of its size between 1963 and 2018”<sup>94</sup>, threatening the economic and food security of those that depend on it. In 2018 alone, it was estimated that over 3 million people in

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<sup>92</sup> United Nations Development Programme, “How to stop the decline of Lake Chad?”, last modified 21 Nov 2017. <https://stories.undp.org/how-to-stop-the-decline-of-lake-chad#!>

<sup>93</sup> Internal Displacement Monitoring Centre. Global Report on Internal Displacement 2018: Internal Displacement Monitoring Centre Norwegian Refugee Council, 2018. P. 21

<sup>94</sup> Kamta, Frederic Noel, Janpeter Schilling, and Jü Scheffran. "Insecurity, Resource Scarcity, and Migration to Camps of Internally Displaced Persons in Northeast Nigeria." Sustainability 12, no. 17 (2020). P.7

the region were affected with food insecurity<sup>95</sup> resulting in local-level conflicts within the region as people find themselves in conflict over the increasingly scarce resources as they try to maintain a livelihood and feed themselves and their families.

The effects of climate change in the Lake Chad Region is linked to internal and external migration of the population as they attempt to cope with the negative outcomes. For example, the increased desertification within the region has led to the destruction of traditional grazing lands for herdsman forcing them “to migrate to new settlements where they can access green grasses”<sup>96</sup>. It has also led to the migration of males both internally and externally as they search for ways in which to support themselves and their families. While they initially migrate in the hope of returning home with newfound wealth or sending remittances back home to support spouses and children financially, oftentimes they never return at all leaving their families and wives in greater economic insecurity.

The effects of climate change and migration in the region have also had a significant impact on women, especially those that live in traditionalist households “since women are restricted, and even denied their freedom, in terms of migrating and engaging in productive activities, owing to gender norms around men and women’s assigned roles in the household”<sup>97</sup>. Thus, with the departure of the males in the family, the responsibility for the household has fallen to the women to provide for themselves and their families by executing the agricultural work normally done by men.

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<sup>95</sup> McAuliffe, Marie, Binod Khadria, and Céline Bauloz. World migration report 2020. IOM, 2019. P.66

<sup>96</sup> Ani, Kelechi Johnmary and Dominique Emmanuel Uwizeyimana. "Climate Change and Changing Environmental Insecurity in the Lake Chad Region." *Journal of African Union Studies* 9, no. 2 (2020). P. 71

<sup>97</sup> Masson, Virginie Le, Colette Benoudji, Sandra Sotelo Reyes, and Giselle Bernard. "How Violence Against Women and Girls Undermines Resilience to Climate Risks in Chad." *Disasters* 43, no. S3 (2019). P. S255



From a security perspective, the economic hardship and migration caused by climate change in the Lake Chad Region has led to young men to become more likely to join armed groups in the region. This has helped fuel recruitment into the Boko Haram insurgency as the group offers young men economic opportunity that they are not able to find alone<sup>98</sup>. This loss of male heads of household has also put young women in the region at great risk of “child, early and forced marriage, denial of access and control over resources, eviction of one’s home and sexual violence within their household”<sup>99</sup>.

The ongoing crisis in the Lake Chad Region is an example of the nexus between climate change, migration, gender dynamics and security. It is a situation that demonstrates how gender dynamics in the wake of climate crisis can negatively impact persons of different genders and how it can then lead to gender-based violence, the degradation of cultural norms, and in some cases facilitate the continuation of conflict by providing opportunities for armed groups to recruit those members of the community affected by climate change.

The crisis also alludes to the complex security solutions that would be necessary to improve the situation and re-establish security for the region’s population. Should there come a point where affected countries request support from the international community to assist with the ongoing humanitarian and security crisis in the region, willing participants will need to ensure they plan and execute operations that cover the full spectrum of the nexus.

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<sup>98</sup> Kamta, Frederic Noel, Janpeter Schilling, and Jü Scheffran. "Insecurity, Resource Scarcity, and Migration to Camps of Internally Displaced Persons in Northeast Nigeria." *Sustainability* 12, no. 17 (2020). P.12

<sup>99</sup> Nagarajan, Chitra, Virginie Le Masson, Colette Benoudji, Sandra Sotelo Reyes, Marisa O. Ensor, Molly Kellogg, Maria Tanyag et al. "Gender, Climate & Security: Sustaining Inclusive Peace on the Frontlines of Climate Change." (2020). P.29

### *The Sahel Region*

The current crisis in the Sahel, a sub-Saharan region home to seventeen separate nations which stretch from the Atlantic Coast of Africa to the Indian Ocean, is another example of the nexus between climate change, migration, gender dynamics, and security. The Sahel region has been recognized “as ‘ground zero’ for climate change due to its extreme climatic conditions and highly vulnerable population”<sup>100</sup> and has for the past few decades been subject to “civil war, increasing population pressures, and pervasive poverty and aid dependency”<sup>101</sup>.

In the Sahel Region, climate change has truly acted as a threat multiplier as “temperatures have risen, droughts have been recurrent and severe, and floods have occurred more frequently”. This has led to economic and food insecurity for those living in the region as the effects of climate change have led to increased desertification, coastal erosion, and the degradation of the remaining arable land. These climate change driven effects have had a detrimental effect on the regions population, and the situation will only continue to worsen as the sub-Saharan “population and urbanisation rate are predicted to increase dramatically in coming decades”<sup>102</sup> putting an even greater strain on the region’s scarce resources.

Migration is already part of the social and economic fabric of the Sahel Region as annual migration is used for agricultural purposes, such as the movement of herds from one grazing area to the next. Climate change, however, is increasing the number of internal and external migrants, with a large portion of the population abandoning traditional agricultural practices due to the loss

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<sup>100</sup> Bronkhorst, Salome and Urmilla Bob. *Conflict-Sensitive Adaptation to Climate Change in Africa*. Berlin: BWV Berliner Wissenschafts-Verlag, 2014. P. 196

<sup>101</sup> United Nations Environment Program. *Livelihood Security: Climate Change, Migration and Conflict in the Sahel*, 2012. P.13

<sup>102</sup> Internal Displacement Monitoring Centre. *Global Report on Internal Displacement 2018: Internal Displacement Monitoring Centre Norwegian Refugee Council*, 2018. P.18

of arable land and migrating to the coastal regions and cities<sup>103</sup>. This in turn places an inordinate amount of pressure on women in the region, as men migrate away looking for economic opportunity, leaving women behind who become more vulnerable to poverty due to differences in social and cultural norms.<sup>104</sup>

Climate change has also increased the amount of conflict within the region between “pastoralist groups and farming communities over access to land or other natural resources”<sup>105</sup>. For example, Sudanese men in North Kardofan, Sudan have begun moving into the neighbouring state of South Kardofan in search of grazing lands for their cattle, putting themselves at greater risk of conflict due to local disputes within the province and its proximity to war torn South Sudan<sup>106</sup>.

The effects of climate change will be experienced differently in the region based on gender dynamics. With the males migrating both internally and externally from the region to find economic opportunity, women are normally obligated to remain behind and are faced with the increased responsibilities the men can no longer fulfill. For example, they take on they become responsible for providing food and income for their families, tasks that are difficult given the cultural view of women in the workforce. Concurrently, they are expected to continue performing their own normal responsibilities within the household and local community. The loss of the men to climate-induced migration has also placed these women, and their children, at

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<sup>103</sup> United Nations Environment Program. *Livelihood Security: Climate Change, Migration and Conflict in the Sahel*, 2012. P.8

<sup>104</sup> *Ibid.* P.67

<sup>105</sup> Nagarajan, Chitra, Virginie Le Masson, Colette Benoudji, Sandra Sotelo Reyes, Marisa O. Ensor, Molly Kellogg, Maria Tanyag et al. "Gender, Climate & Security: Sustaining Inclusive Peace on the Frontlines of Climate Change." 2020. P. 20

<sup>106</sup> *Ibid.* P.20

greater danger of conflict as they no longer have the benefit of the social and economic security provided by the male members of the household and community.

Men in the Sahel Region are also at greater risk of conflict due to climate change. The need to migrate into, or through, conflict riddled areas put the men at-risk of being drawn into the conflict or becoming casualties of war. Further, they risk being recruited into the various factions involved in regional conflicts as means to gain economic security, but should they die fighting many countries in the region will not “permit women to inherit land or other assets when their husbands or male family members die”, putting their families at great risk of becoming impoverished and therefore at greater risk of gender-based violence<sup>107</sup>.

The current crisis in the Sahel Region of Africa demonstrates the clear linkages between climate change, migration, security, and gender dynamics in the region. It is a case that confirms the amplifying effect of not only climate change, but each part of the nexus interacting upon the other. For example, in the Sahel, climate change feeds an escalation in economic hardship and conflict for both men and women by putting both genders at higher risk of harm from conflict as they search for the economic means to support themselves and their families. As they migrate to find this opportunity, they run a significant risk of friction and conflict with the local populations they encounter as they cause stress on the natural resources in these new areas.

#### *West Papua, Indonesia*

The final case is that of the crisis currently ongoing in the Indonesian state of West Papua. Located on the western side of the island of New Guinea, it is home to a large indigenous population. Originally under the jurisdiction of the Netherlands as part of the Dutch East Indies when Indonesia declared independence in 1945, West Papua was not included in the newly

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<sup>107</sup> United Nations Environment Program. *Livelihood Security: Climate Change, Migration and Conflict in the Sahel*, 2012. P.67

formed country and “[t]he Netherlands promised the West Papuans national independence through a process of decolonization that would lead toward self-rule”<sup>108</sup>. In 1961, Indonesia invaded West Papua and unilaterally annexed the state against the wishes of its people and the clear intentions of the Dutch Government.

To avoid conflict between the Netherlands and Indonesia, the United States mediated talks between the two countries that led to the establishment of a provisional UN authority to govern the state until a referendum could be held to determine if the state’s population supported joining Indonesia. However, the UN authority transferred responsibility for the state to Indonesia in 1963 after accepting a promise that a UN-supervised referendum would be held to determine the state’s future. The subsequent referendum held in 1969 has been considered illegitimate by the West Papuans, as it was not open to the entire population and included only pro-Indonesia Papuan leaders who voted unanimously in favor of incorporation into Indonesia. Since the time of the referendum West Papua has remained part of Indonesia and has been plagued by conflict as the indigenous population continues to advocate for independence contrary to the desires of a government that is “highly intolerant of peacefully articulated pro-independence sentiments”<sup>109</sup>.

The continued conflict over the status of the nation’s independence has been further exacerbated by conflict over natural resources located in the state. At the forefront is the controversial Grasberg Mine<sup>110</sup> and the rapid increase in Oil Palm plantations which as resulted in “scarcity of traditional foods, loss of livelihoods, loss of settlements, and loss of socio-cultural

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<sup>108</sup> Trajano, Julius Cesar I. "Ethnic nationalism and separatism in West Papua, Indonesia." *Journal of Peace, Conflict and Development* 16 (2010). P. 16

<sup>109</sup> *Ibid.*

<sup>110</sup> Csevár, Szilvia, and Christine Tremblay. "Sexualised Violence and Land Grabbing: forgotten conflict and ignored victims in West Papua." *Women, Peace and Security* (2019).P.1

attachments”<sup>111</sup> as land is appropriated through sale or force for development. This has led to the displacement of entire communities, putting them at greater security risk as they seek new homes and economic opportunity.

West Papua is comprised of almost 9 million hectares of forest, covering 97 percent of the state’s land mass and considered to be “a region with the world’s largest biodiversity”<sup>112</sup>. However, increased destruction of the forest to make way for economic development combined with climate change are “rapidly depleting natural resource base, contributing to the loss of livelihoods and food security”<sup>113</sup> which is contributing to internal and external migration of the indigenous population.

Further exacerbating tensions between the indigenous population and the government was its official policy of transmigration, one that was in effect until 2000. This policy encouraged the migration of poor Indonesian families from other overpopulated islands within the country to move to West Papua in an attempt “to quell the Papuan independence movement and to effectively exploit the “potential” of West Papua”<sup>114</sup>. The government would then take large tracts of land from the indigenous population to provide to the Indonesian settlers, such as during “Operation Clean Sweep” in 1981, and then legitimized this appropriate through the passing of legislation.

Since its annexation, the Indonesian government has maintained a continuous Military and Civil Police presence in the state to counter West Papuan activists and separatist groups,

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<sup>111</sup> *Ibid.* P.26

<sup>112</sup> Runtuboi, Yubelince Y., Dwiko B. Permadi, Muhammad Alif K. Sahide, and Ahmad Maryudi. "Oil Palm Plantations, Forest Conservation and Indigenous Peoples in West Papua Province: What Lies Ahead?." *Forest and Society* (2021). P.24

<sup>113</sup> Nagarajan, Chitra, Virginie Le Masson, Colette Benoudji, Sandra Sotelo Reyes, Marisa O. Ensor, Molly Kellogg, Maria Tanyag et al. "Gender, Climate & Security: Sustaining Inclusive Peace on the Frontlines of Climate Change." (2020). P.35

<sup>114</sup> *Ibid.* P.18

such as the Organisasi Papua Merdeka (OPM or Free Papua Movement<sup>115</sup>, and provide security for resource extraction. This had led to numerous military operations which have oftentimes been brutal, involving the use of gender-based violence such as sexual assault, rape, and torture of local indigenous women in an effort to locate their husbands and sons who have joined with the activist and terrorist groups.

The military has also used this campaign of sexualized violence against women, as a means to “incite the indigenous population to flee and abandon their houses and lands”<sup>116</sup>, allowing them to then appropriate the land for the state to use for economic exploitation. This campaign of gender-based violence has led to increasing numbers of migrants within the state as women and their families flee the violence in search of safety and economic opportunity.

The ongoing crisis in West Papua is a complex situation that sits at the centre of the nexus of climate change, migration, conflict, and security. It highlights the role that gender-based violence can play in these types of crises when it is used as a weapon against populations already made economically and culturally vulnerable by climate change.

This case is also a warning that as climate change continues and increases in pace and natural resources become scarcer, conflict over the resources will become more common place, leading to greater migration and insecurity for those involved. It highlights the challenges gender-dynamics would place on any security force being called upon to re-establish security in the region, as they would be required to assist a population scarred by ongoing gender-based violence.

### *Conclusion*

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<sup>115</sup> Trajano, Julius Cesar I. "Ethnic nationalism and separatism in West Papua, Indonesia." *Journal of Peace, Conflict and Development* 16 (2010). P.26

<sup>116</sup> Csevár, Szilvia, and Christine Tremblay. "Sexualised Violence and Land Grabbing: forgotten conflict and ignored victims in West Papua." *Women, Peace and Security* (2019).P.7

The establishment of the conceptual framework and the analysis of the on-going crises in the Lake Chad Region, the Sahel, and West Papua, Indonesia have demonstrated a clear and direct linkage between climate change, climate-induced migration, security, and gender dynamics. More specifically, each case has demonstrated the symbiotic nature of these factors and how they act as feed forward effects, or ‘snowball’ effects as dependent and independent variables change. They have also demonstrated the risks of gender-based violence in the populations made vulnerable by climate change and climate-induced migration.

From a security perspective, these cases have demonstrated the negative economic, psychosocial, health and safety consequences for persons of all genders, and how climate change and climate-induced migration can amplify the risk of recruitment into armed groups in regions experiencing conflict, or conflict between populations of climate-induced migrants and local communities along the migration pathway.

### **Future Challenges**

The nexus underscores the need for the CAF to fully recognize the imminent threat posed by climate change and climate-induced migration. The continuing impacts of climate change will inevitably lead to a greater demand for CAF support around the globe in terms of humanitarian and disaster relief missions, peacekeeping operations, and in the worst cases military combat missions aimed at stabilizing and re-securitizing affected regions around the globe.

Canada’s defence policy “*Strong, Secure, Engaged*” (SSE) acknowledges the risk that climate change plays globally, stating that it must be viewed through a “security lens”<sup>117</sup> and goes further in recognizing the amplifying effect that climate change plays in unstable regions around the globe as it “aggravate[s] existing vulnerabilities, such as weak governance, and increase[s]

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<sup>117</sup> Canadian Armed Forces. "Strong, Secure, Engaged: Canada's Defence Policy." Department of National Defense (2017).P.52



resource scarcity, which in turn heightens tensions and forces migrations”<sup>118</sup>. However, this policy document lacks dialogue on the actual threats posed to the CAF and the probable tasks and missions that it may be called upon to undertake.

This portion of this paper will examine the likely scenarios where the CAF may be engaged in responding to climate change and climate induced migration; Humanitarian and Disaster Relief (HADR), Peacekeeping Operations, and Combat Operations/Peacebuilding. It will also look to provide recommendations on how the CAF could better prepare itself to respond to climate-induced migration in each of these different areas of operation.

### *Humanitarian and Disaster Relief*

The CAF is no stranger to HADR missions, having conducted operations yearly around the globe since 2017 in response to international emergencies and requests under the auspices of Operation RENAISSANCE, the CAF’s contingency plan for “rapid deployment to the scene of a disaster overseas”<sup>119</sup>. The CAF’s mission to the Caribbean in 2017 in response to hurricane Irma and Maria is an example of one type of HADR mission that could be expected in the future<sup>120</sup>. This mission involved the deployment of 300 personnel which included the Disaster Assistance Relief Team (DART), a naval frigate, and military aircraft to provide supplies, airlift, and general relief work in the affected countries.

However, given the ever-increasing effects of climate change around the globe, it is most likely that the CAF will be called on more frequently and with greater urgency to respond to HADR events, with the expectation that it will be in countries that are already experiencing a

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<sup>118</sup> *Ibid.*

<sup>119</sup> Canadian Armed Forces, “Operation RENAISSANCE,” Department of National Defence, last accessed 05 May 2021. <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/current-operations/operation-renaissance.html>

<sup>120</sup> *Ibid.*

high level of instability due to a variety of political, social, and economic factors. One of the likely problems the CAF will face in these situations will be climate-induced migration both internally and externally from the affected country.

As demonstrated earlier, this climate-induced migration will present complex and unique problems for CAF personnel involved in HADR missions, especially when viewed in terms of the linkage between climate change, migration, gender dynamics and security. The CAF has recognized the need to consider gender when planning operations<sup>121</sup> by ensuring that planners consider the legal and ramifications of encountering gender-based violence, including understanding how different genders are treated under local laws and customs. These gender considerations will help to ensure that CAF operations are planned in a sensitive manner and will help to prepare commanders and subordinates to respond to security situations within displaced/migrating populations.

The difficulty, however, will be when the CAF is called to respond to HADR missions in countries where institutions are no longer functioning or absent. This will place the burden of security, and in some cases dispute resolution, in the decision space of commanders, something that they will need to be prepared for and equipped to respond to. This will require the Canadian government to develop clear policies and guidelines for deployed commanders on how to respond to gender-based violence in these incidences to ensure that situations such as the Afghanistan example studied earlier do not arise.

### *Peacekeeping*

Another area highlighted in Canada's defence policy as a priority, the government sees peacekeeping as fundamental to the future CAF's operations on the global stage and has stated

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<sup>121</sup> Canadian Armed Forces. "Integrating Gender Perspectives in Operations", Department of National Defence (2019)

that it is making a “renewed commitment to United Nations peacekeeping”<sup>122</sup>. Currently, the CAF is involved in peacekeeping missions under the auspices of Op PRESENCE in countries such as the Democratic Republic of the Congo, Sudan, and Mali<sup>123</sup>. These countries are on the front lines of climate change and migration given their proximity to the Sahel Region and their own history of instability and are indicative of countries that Canada will most likely find itself assisting in the future.

In *SSE* Canada has acknowledged that the United Nation’s routinely suffers from a lack of capacity and capability to respond to conflicts around the globe and commits the government and the CAF to providing greater support in future<sup>124</sup>. This will put future Canadian peacekeepers in a position where they are working to end conflict that has been started or amplified by the effects of climate change. CAF members and commanders can expect to deal with climate-induced displacement in conflict as the population seeks to flee from violence or looks to find a new source of economic security.

Given the results of our previous research, it is highly likely that CAF members will be required to manage the consequences of gender-based violence within the migrating population and the conflict zone. It will be critical for deploying CAF peacekeepers to be provided with the necessary authorities and instructions on how to properly care for victims of gender-based violence especially in countries where governments and institutions are biased towards the victims or are no longer functioning and capable of providing justice and protection.

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<sup>122</sup> Canadian Armed Forces. "Strong, Secure, Engaged: Canada's Defence Policy." Department of National Defense (2017). P.24

<sup>123</sup> Canadian Armed Forces, "Operation PRESENCE", Department of National Defence, last accessed 10 May 2021. <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/current-operations/op-presence.html>

<sup>124</sup> Canadian Armed Forces. "Strong, Secure, Engaged: Canada's Defence Policy." Department of National Defense (2017).P.24

### *Combat Operations/Peace Building*

While Canada has committed to increasing its participation in UN peacekeeping operations, it has also acknowledged that changing face of peacekeeping stating that “the majority of UN missions are being deployed into complex political and security environments”<sup>125</sup> requiring peacekeepers to be armed and prepared for conflict. This increased likelihood that that the CAF will be called upon to conduct combat operations/peacebuilding before transitioning to peacekeeping operations necessitates that CAF deployment personnel must be properly equipped and trained to operate under these circumstances.

As noted earlier, the continued rapid pace of climate change will act as a catalyst for conflict around the globe increasing already present tensions between competing factions that will not have to vie for an ever-shrinking pool of resources. Climate change will also continue to affect the security of regions in which Canada takes interest, such as the Lake Chad Region, the Sahel and the South Pacific increasing the likelihood of the CAF being called upon to intervene and stop conflict from erupting or end ongoing conflicts in these areas. Given the migration and gender security issues that come with conflict already present in these regions, the CAF will need to ensure that it deploys with robust and clear direction and guidance to handle climate-induced displacement and gender-based violence. This will be even more important when the CAF is deployed to countries where the cultural values and ethics may not necessarily align with those of Canada.

For example, learning from the previous example of the Rwandan Genocide, CAF commanders and personnel must be prepared to act decisively to end violence against the most vulnerable segments of the population, while providing trauma-informed medical and

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<sup>125</sup>Canadian Armed Forces. "Strong, Secure, Engaged: Canada's Defence Policy." Department of National Defense (2017). P.55

psychological care in a theatre of operations. A clear understanding of the crisis situation, coupled with deliberate planning that takes into account cultural and gender-dynamics, will ensure that future operations are properly resourced to respond to these types of situations in the future.

### *Recommendations*

Due to the rapidly increasing pace of climate change it is highly likely that the CAF will be called upon to participate in a multitude of HADR, peacekeeping and peacebuilding operations. Canada's defence policy clearly identifies that climate change and climate-induced migration are key issues that will face the CAF in the future, though it lacks the critical details of how the CAF will prepare for this existential threat, both from a security and gender-dynamics perspective.

In 2016 the Chief of the Defense Staff ordered the inclusion of Gender Based Analysis Plus (GBA+) to be used for all future planning and operations. It was not until 2019, however, that the institution explained how this was to be implemented by publishing a gender aide-memoire to assist commanders and staff officers with ensuring gender-dynamics are considered in all facets of military planning<sup>126</sup>. While these were important steps in the right direction, the CAF must go further by making a concerted effort to update key documents such as the Canadian Joint Publication 5.0. This document outlines the operational planning process used by the military for planning operations and exercises, but fails to include the guidance found in the gender aide-memoire,<sup>127</sup>. By updating key policy documents in this way, the military can be rest

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<sup>126</sup> Canadian Armed Forces. "Integrating Gender Perspectives in Operations", Department of National Defence (2019).

<sup>127</sup> Canadian Armed Forces. Canadian Forces Joint Publication. CFJP 5.0, Canadian Forces Operational Planning Process (OPP), B-GJ-005-500/FP-000, Change 2. Ottawa, Canadian Forces Warfare Centre, April 2008

assured that future plans for exercises and operations include the use of these important gender analysis tools.

Updating policies and documents to embed GBA+ will also help to ensure that Canadian operations focus on the root causes of conflicts and work towards solutions that are inclusive of all members of the population. For example, had operational planning processes included GBA+ when used for planning ground operations in Afghanistan, it is likely that Commanders and CAF members would have greater moral and professional clarity with respect to their roles and responsibilities when faced with the sexual assault of minors.

The CAF must also undertake a fulsome review of the force's capabilities and equipment to ensure that it is properly resourced to undertake future operations in an environment afflicted by climate change, migration, gender-dynamics, and security. For example, one area that is lacking is the size and make up of the Disaster Assistance Relief Team (DART). The CAF should consider increasing the size of the DART or creating multiple teams given the probable future increase in demand for HADR. Another example would be for the CAF to consider the acquisition of increased transport capabilities to ensure the ability to deploy forces to the most likely regions around the globe. This will be critical given that instability and conflict will likely damage or make unusable the organic transportation infrastructure in the affected nations forcing the CAF to rely on its own capabilities.

The CAF and the Government of Canada should also work to strengthen existing military relationships with allied nations, and nations that are at greatest risk of climate change. These relationships will be crucial in preparing for future operations that will undoubtedly occur in the context of allied or coalition environments. For example, the CAF should ensure that it works closely with its partners in the North Atlantic Treaty Organization (NATO) on the development

and implementation of alliance policy on climate change and climate-migration. This will ensure that when the alliance decides to deploy forces in response to climate change driven events, the CAF and the Government of Canada are cognizant of contingency plans and have been given the ability to ensure the CAF is prepared to play an effective and meaningful role.

Finally, it is important that the CAF begin to establish or deepen existing relationships with other federal departments. After all, the CAF operates as one member in a whole-of-government team in responses to crises overseas. While this paper did not examine the role of these relationships in depth, the CAF cannot afford to plan for a future affected by climate change and climate-induced migration in isolation, and so it is therefore recommended that more research in this domain occur to help influence international doctrine in such a way as to ensure peaceful coordination of multinational activities to aid climate-torn countries safely and effectively.

## CHAPTER 4 – CONCLUSION

The year is 2030 and the Canadian Armed Forces is in the final stages of preparing for yet another international mission with other likeminded allied nations. Climate change has continued unchecked, with extreme weather events becoming the norm devastating countries along the equator and in places where drought and flooding has been an ongoing struggle. In the Lake Chad Region of Africa, conflict has once again broken out as various factions in the area war over dwindling resources. Global warming has continued to degrade the food and water resources of the region, with the Lake itself becoming the only remaining source of fresh water for hundreds of miles. Local conflict over water has intensified, and the local population is on the brink of collapse.

Previous conflicts in the region have been indecisive, with peace efforts being continually undermined by covert terrorist actions against military and civilian targets on all sides, inflaming nationalist sentiments and fuelling calls for a resumption of hostilities. The international community is concerned that war is inevitable and calls for peacekeeping forces to be deployed to the region to help diffuse the situation and provide security for vulnerable civilians is imminent.

Canada has agreed to deploy CAF personnel to the region in an effort to calm the situation and respond to the developing humanitarian crisis. CAF operational planning staff have been working for weeks to finalize the deployment orders for the deploying Task Force using the latest iteration of the CAF planning process, one that has been designed to consider the effects of operations on the local populations from both a cultural and gender perspective. They have been assisted by a cultural liaison who is an expert in the region's dynamics, as well as a senior gender advisor from the Department of National Defence (DND). These resources have proven



invaluable, as they have provided advice on the most appropriate course of action for interacting with the local population given their evolving and complex situation.

Through a robust planning process the staff have determined that climate change has played a central role in the continuing conflict but has affected the region more acutely than just through the degradation of food and water sources. The gender advisor has explained to the staff that the lack of economic and physical security has led to a growing influx of men in the region to join with local terrorist organizations, as they have promised to provide the men and their families with food, water, and protection. While on the surface it appears that the men who have joined these terrorist organizations to help themselves and their family, they have fallen victim to the flip side of this coin - - a loss of security for women in the region who were left behind and who have become increasingly victims of gender-based violence, such as sexual assault and rape, by rival factions. The cultural liaison further explains that women in the region are beginning to flee the violence and have begun migrating away from their homes towards makeshift refugee camps where they are being placed at other social and physical risks. Add to this the complexities of pregnant women and those with children and the complications grow to a much greater degree. These insights have provided the planning staff with the ability to more clearly understand the root causes of the conflict which will assist them in ensuring that their operational plan will be met with success.

Concurrent to these planning efforts, the designated Command Staff have been undergoing intensive cultural and gender sensitivity training designed to help them be better prepared to work with the local populace towards conflict resolution. The designated legal advisor has also been working with DND and the Ministry of Foreign Affairs to ensure all necessary legal agreements are in place to provide the Task Force Commander with the freedom

of action necessary to achieve mission success. This includes agreements with neighbouring states to deal with perpetrators of gender-based violence, as well as climate and conflict-induced migrants. He has also worked to ensure that the guidance from the Canadian government to the Task Force Commander delineates clear goals and provides the necessary rules of engagement to respond to any likely scenario.

Three months later the Canadian Task Force has been in theatre for roughly two months, during which time they have been called upon to intervene in an escalation of hostilities, including gender-based violence being used as a means of ethnically cleansing the Lake Chad Region. The Task Group was able to respond to the situation, providing trauma-informed medical care quickly and effectively to those affected by the violence, and apprehending those involved in perpetrating sexualized violence on women and children in the area. Thanks to pre-established legal agreements with neighbouring nations, the perpetrators that have been apprehended were transported to a neighbouring country where they will be tried for their crimes under international law.

Work has now begun to de-escalate tensions among the rival factions and to find solutions that address the root causes of the issues, namely climate change and loss of economic resources. The CAF and other allies in the area have also started the difficult but rewarding task of returning migrants to their homes, working with outside agencies to ensure that they are provided with climate change adaptive strategies to remain there for the long term.

This scenario is a likely representation of what the CAF will likely face in the years to come given the increasing effects of climate change. What this scenario does not clearly articulate, however, is that this is one of many evolving crises where the CAF and militaries of

other countries more resilient to the effects of climate change have had to intervene around the globe.

Without significant action by the world community, climate change and climate-induced migration are set to become an overwhelming security crisis, particularly affecting populations in developing nations already facing an array of climate, economic, and security hardships. The expectation that the world will see 143 million climate migrants by 2050 signals the seriousness of this already complex issue, which will be compounded by gender-dynamics and conflict over access to ever diminishing natural resources.

This expected increase in the number and frequency of humanitarian and security crises will stretch the capacity of Canada and her allies to respond in a meaningful and substantial way. Canada's past role as a peacekeeping nation provides it with unique insight into these types of situations, positioning Canada to be a leader in navigating these future global humanitarian efforts. The CAF, however, must prepare itself for the reality of operating in a complex environment that has been devastated by climate change and the exacerbation of pre-existing gender inequities.

To be effective in the 2030 scenario and beyond, the CAF must re-examine its readiness to conduct not only humanitarian and disaster relief, but the full spectrum of combat operations in regions affected by climate change and climate-induced migration. It must ensure that adequate personnel and supporting assets are readily available to respond to these crises without degrading the CAF's capacity to maintain its other critical tasks identified in Canada's defence policy such as maintaining "an effective deterrent prevent[ing] conventional military threats from reaching our shores"<sup>128</sup>

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<sup>128</sup> Canadian Armed Forces. "Strong, Secure, Engaged: Canada's Defence Policy." Department of National Defense (2017). P.60

Furthermore, to ensure the CAF can achieve successful outcomes during these moments of crisis, it must re-examine its operational and planning policies to ensure an appreciation of gender-dynamics in these unique cultural-political security and humanitarian contexts are included at each and every stage of future operations. This will increase the likelihood that CAF-led operations are effective at addressing the root-causes of the crisis, rather than just working to defuse the situation.

In closing, this paper has established the linkages between climate change, migration, gender-dynamics and security and has identified climate change and climate-induced migration as one of the largest threats facing the future CAF and allied nations now and into the future. It has highlighted the probable tasks that the CAF will be called upon to undertake and the need to ensure that CAF policies and procedures are reviewed to ensure that future operations of any kind are done in a manner that accounts for cultural sensitivities and gender-dynamics, two critical factors that will enable the CAF to address the root causes of crises around the globe.

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