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**NATO Brief No. I: The Threat of Climate Disasters**

Climate-driven environmental change is predicted to impact several, if not all, factors that threaten security.<sup>1</sup> Climate change will likely cause the following: increased migration, political instability, weakened resilience and capabilities of states to respond to disaster, increased need for humanitarian assistance and disaster response, increased tensions over shared resources, and enhanced geo-political interest in the Arctic.<sup>2</sup> Since the early 1990s, climate-related disasters have doubled; there have been an average of 213 climate-related disasters per year between 1990 and 2016.<sup>3</sup> These rapidly changing weather conditions have led to sudden population displacement, the destruction of infrastructure, and changes in the availability of resources.<sup>4</sup> According to the World Economic Forum's 2019 *Global Risks Report*, environmental issues make up three of the five global risks and impacts, with extreme weather events listed as most likely and with the greatest impact.<sup>5</sup> Examples of extreme weather events, as seen in 2018, include the deaths of nearly 100 people in the wildfires of Attica, Greece, and up to 1,000 people dead from flooding in southern India.<sup>6</sup> Future environmental instability will call for an increased demand in security organizations such as the North Atlantic Treaty Organization (NATO) in order to address such insecurities.

Conditions such as extreme drought are one of such environmental issues that have become more prevalent in the 21st century, leading to hazards such as food and water scarcity, increased risk of forest fires, resource conflict, and epidemics.<sup>7</sup> Between 1998 and 2012, the eastern Mediterranean region faced its worst drought in 900 years.<sup>8</sup> Southern Italy and Spain, in 2017, faced severe drought that cut crop output in some regions and sectors by as much as 60 to 70 percent.<sup>9</sup> Morocco's Al Massira Dam and Spain's Buendia Dam saw its surface areas shrunk by 60 percent or more in the past five years, and Iraq's Mosul Dam withered by 60 percent since 1990.<sup>10</sup> During Morocco's drought in 2017, 15 people were killed in a stampede at a food distribution site, after wheat and barley production was at its lowest level in a decade.<sup>11</sup> Drought in Member States such as India, where 44 percent of adults work in agriculture, has devastated farmers and been linked to an increase in suicide rates in the farming sector.<sup>12</sup> An

<sup>1</sup> Tyler H. Lippert, "NATO, Climate Change, and International Security: A Risk Governance Approach," Pardee Rand Graduate School, 2016. [https://www.rand.org/pubs/rgs\\_dissertations/RGSD387.html](https://www.rand.org/pubs/rgs_dissertations/RGSD387.html).

<sup>2</sup> Environment – Nato's Stake, "Environment Security," North Atlantic Treaty Organization, last modified December, 9, 2014, [https://www.nato.int/cps/en/natohq/topics\\_91048.htm?](https://www.nato.int/cps/en/natohq/topics_91048.htm?)

<sup>3</sup> Report of the Secretary-General, "Long-term impact of current trends in the economic, social and environmental areas on the realization of the Sustainable Development Goals," High Level Political Forum 2019 <https://undocs.org/en/E/2019/66>

<sup>4</sup> "Long-term impact," High Level Political Forum 2019.

<sup>5</sup> Dan Smith et al., "Climate Security: Making it #Doable," Clingendael Report 2019, Netherlands Institute of International Relations, [https://www.clingendael.org/sites/default/files/2019-02/Climate\\_Security\\_Makingit%23doable\\_0.pdf](https://www.clingendael.org/sites/default/files/2019-02/Climate_Security_Makingit%23doable_0.pdf), 6

<sup>6</sup> Smith et al., "Climate Security," Clingendael Report 2019, 9

<sup>7</sup> Michon Scott and Rebecca Lindsey, "2017 State of the climate: Global drought," Climate.gov, last modified August 1, 2018, <https://www.climate.gov/news-features/featured-images/2017-state-climate-global-drought>

<sup>8</sup> Karl Hille, "NASA Finds Drought in Eastern Mediterranean Worst in 900 Years," *NASA's Earth Science News Team*, last modified August 7, 2017, <https://www.nasa.gov/feature/goddard/2016/nasa-finds-drought-in-eastern-mediterranean-worst-of-past-900-years>

<sup>9</sup> Isla Binnie and Paul Day, "One of the worst droughts in decades devastates South Europe crops," *Reuters*, last modified July 14, 2017, <https://www.reuters.com/article/us-europe-farming-drought/one-of-worst-droughts-in-decades-devastates-south-europe-crops-idUSKBN19Z1XW>

<sup>10</sup> Charlie Iceland et al., "Its Not Just Capetown: 4 Shrinking Reservoirs to Watch," *Resource Watch*, last modified April 11, 2018, <https://blog.resourcewatch.org/2018/04/11/its-not-just-cape-town-4-shrinking-reservoirs-to-watch/>

<sup>11</sup> Cleve Wootson, "15 trampled to death in stampede for flour in drought-stricken Morocco," *The Washington Post*, November 19, 2017, [https://www.washingtonpost.com/news/worldviews/wp/2017/11/19/15-trampled-to-death-in-stampede-for-flour-in-drought-stricken-morocco/?noredirect=on&utm\\_term=.6bd71f7fc4f3](https://www.washingtonpost.com/news/worldviews/wp/2017/11/19/15-trampled-to-death-in-stampede-for-flour-in-drought-stricken-morocco/?noredirect=on&utm_term=.6bd71f7fc4f3)

<sup>12</sup> Charlie Iceland et al., "Its Not Just Capetown: 4 Shrinking Reservoirs to Watch," *Resource Watch*, last modified April 11, 2018, <https://blog.resourcewatch.org/2018/04/11/its-not-just-cape-town-4-shrinking-reservoirs-to-watch/>

increase in forest fires has also been linked to recent droughts.<sup>13</sup> In 2018, Sweden experienced its worst outbreak of forest fires ever recorded. In this same year, 100 people died in Greece and 85 people died in the United States of America (US) due to forest fires.<sup>14</sup> Climate change has also been linked to food shortages and malnutrition in Central and South America, especially in Guatemala, El Salvador and Honduras, which has led to increased migration.<sup>15</sup>

NATO first recognized the significance of natural environmental challenges in the international community with the establishment of the Committee on the Challenges of Modern Sciences (CCMS) in 1969.<sup>16</sup> CCMS operates through nationally-funded teams who explore issues that affect “the environment and the quality of life through 3-5 year pilot studies, shorter term projects, workshops and roundtables”; 250 publications have resulted in the work of CCMS focusing on issues such as “defence-related environmental issues, pollution control, environmental security and regional issues.”<sup>17</sup> CCMS later merged with the NATO Science for Peace and Security (SPS) Programme in 2006.<sup>18</sup> SPS works to encourage cooperation between both NATO Member States and partner states “based on scientific research, technological innovation and knowledge exchange” and provides “funding, expert advice and support to tailor-made, security-relevant activities that respond to NATO’s strategic objectives.”<sup>19</sup> Throughout the years, NATO has created several working groups in order to address various environmental challenges, such as forest fires, earthquakes, and hurricanes. NATO is currently involved in activities that address “protecting the environment from damaging effects of military operations; preparing for and responding to natural and man-made disasters; addressing the impact of climate change.”<sup>20</sup> These activities focus on two specific thematic areas: environmental protection and environmental security.<sup>21</sup>

Environmental protection focuses on the impact of military practices on the environment. This thematic area stems from the idea that negative impacts and damages to the surrounding environment “can cause social and economic instability and new tensions.”<sup>22</sup> NATO also acknowledges the long-term significance of preventing environmental degradation and embeds environmental protection awareness into its training programs.<sup>23</sup> Environmental security and the impacts of climate-driven environmental change have become increasingly salient issues.<sup>24</sup> In the Wales Summit Declaration, issued at the end of the Wales Summit of the North Atlantic Council (NAC) in 2014, NATO acknowledged the importance of environmental security, stating that “key environmental and resource constraints, including ... climate change, water scarcity, and increasing energy needs will further shape the future security

<sup>13</sup> Michon Scott and Rebecca Lindsey, “2017 State of the climate: Global drought,” Climate.gov, last modified August 1, 2018, <https://www.climate.gov/news-features/featured-images/2017-state-climate-global-drought>

<sup>14</sup> Dan Smith et al., “Climate Security: Making it #Doable,” Clingendael Report 2019, Netherlands Institute of International Relations, [https://www.clingendael.org/sites/default/files/2019-02/Climate\\_Security\\_Makingit%23doable\\_0.pdf\\_9](https://www.clingendael.org/sites/default/files/2019-02/Climate_Security_Makingit%23doable_0.pdf_9)

<sup>15</sup> Smith et al., “Climate Security,” Clingendael Report 2019, 8.

<sup>16</sup> “Environment – Nato’s Stake,” North Atlantic Treaty Organization, last modified December 9, 2014, [https://www.nato.int/cps/en/natohq/topics\\_91048.htm?](https://www.nato.int/cps/en/natohq/topics_91048.htm?)

<sup>17</sup> “Partnership in Action: The Committee on the Challenges of Modern Society (CCMS),” North Atlantic Treaty Organization, <https://www.nato.int/events/0110eapc/english/txt-15.htm>.

<sup>18</sup> “Environment – Nato’s Stake,” North Atlantic Treaty Organization, last modified December 9, 2014, [https://www.nato.int/cps/en/natohq/topics\\_91048.htm?](https://www.nato.int/cps/en/natohq/topics_91048.htm?)

<sup>19</sup> “Science for Peace and Security,” North Atlantic Treaty Organization, last modified July 8, 2019, <https://www.nato.int/cps/en/natolive/78209.htm>.

<sup>20</sup> “Environment – Nato’s Stake,” “Environment Protection,” North Atlantic Treaty Organization, last modified December 9, 2014, [https://www.nato.int/cps/en/natohq/topics\\_91048.htm?](https://www.nato.int/cps/en/natohq/topics_91048.htm?)

<sup>21</sup> “Environment – Nato’s Stake,” North Atlantic Treaty Organization.

<sup>22</sup> “Environment – Nato’s Stake,” “Environment Protection,” North Atlantic Treaty Organization, last modified December 9, 2014, [https://www.nato.int/cps/en/natohq/topics\\_91048.htm?](https://www.nato.int/cps/en/natohq/topics_91048.htm?)

<sup>23</sup> “Environment Protection,” North Atlantic Treaty Organization.

<sup>24</sup> Dan Smith et al., “Climate Security: Making it #Doable,” Clingendael Report 2019, Netherlands Institute of International Relations, [https://www.clingendael.org/sites/default/files/2019-02/Climate\\_Security\\_Makingit%23doable\\_0.pdf\\_6](https://www.clingendael.org/sites/default/files/2019-02/Climate_Security_Makingit%23doable_0.pdf_6)

environment in areas of concern to NATO.”<sup>25, 26</sup> Officials also recognized that these constraints will potentially impact NATO planning and operations significantly.<sup>27</sup>

Currently, NATO addresses emerging environment security challenges based on a wide definition of security that identifies the significance of political, social, and environmental factors. These factors include pollution, the exhaustion of natural resources, extreme weather conditions, and more.<sup>28</sup> Within environmental security, NATO currently conducts its initiatives through the SPS Programme, the Euro-Atlantic Disaster Response Coordination Centre (EADRCC) and the Partnership for Peace Trust Fund projects.<sup>29</sup> The SPS Programme has supported cooperative actions involving environmental security issues since 1969 with the creation of the CCMS.<sup>30</sup> In 1991 through the Rome Declaration, the SPS Programme opened up to partner Member States, many of whom listed environmental security as a top priority.<sup>31</sup> Throughout the 1990s, NATO further opened up its SPS Programme to partner Member States by including the Euro-Atlantic Partnership Council and the Mediterranean Dialogue (MD) Member States, along with initiatives like the NATO Science Fellowships.<sup>32</sup> To further coordination in terms of environmental security, NATO joined the 2004 Environment and Security Initiative (ENVSEC) along with five other international agencies.<sup>33</sup> The purpose of ENVSEC is to address environmental issues that threaten four vulnerable regions: South East Europe, Eastern Europe, South Caucasus, and Central Asia.<sup>34</sup> ENVSEC has several focus areas, which include “addressing the security implications of climate change, strengthening disaster risk reduction, and enhancing public awareness on the links between environment and security.”<sup>35</sup>

Along with boosting cooperation in order to address environment security, NATO is also involved with coordinating civil emergency planning and response to environmental disasters. These measures are primarily taken through the Euro-Atlantic Disaster Response Coordination Centre (EADRCC).<sup>36</sup> The EADRCC was created in the 1990s by the Euro-Atlantic Partnership Council (EAPC) in response to earthquakes in Turkey and Greece.<sup>37</sup> The EADRCC is one of two elements in policy on cooperation with concerns to disaster relief.<sup>38</sup> The second component is the Euro-Atlantic Disaster Response Unit, a “non-standing, multinational force of civil and military elements, deployable in the event of major natural or man-made disasters in an EAPC Member State.”<sup>39</sup> Initially, the EADRCC was involved in humanitarian assistance to support refugees, but has since expanded into responding to many different requests for aid in Member States stricken by natural disasters.<sup>40</sup> The NAC also expanded its mandate in 2004 to include assistance to all areas where NATO is involved militarily, and in 2009 to the Member State of the Mediterranean Dialogue (MD) and the Istanbul Cooperation Initiative (ICI).<sup>41</sup>

<sup>25</sup> “NATO Stresses Climate Change Impacts on Security,” SDG Knowledge Hub, last modified September 10, 2014, <http://sdg.iisd.org/news/nato-stresses-climate-change-impacts-on-security/>

<sup>26</sup> North Atlantic Council, “Wales Summit Declaration,” North Atlantic Treaty Organization, last modified August 30, 2018, [https://www.nato.int/cps/en/natohq/official\\_texts\\_112964.htm](https://www.nato.int/cps/en/natohq/official_texts_112964.htm)

<sup>27</sup> “NATO Stresses Climate Change Impacts on Security,” SDG Knowledge Hub, last modified September 10, 2014, <http://sdg.iisd.org/news/nato-stresses-climate-change-impacts-on-security/>

<sup>28</sup> “NATO Stresses Climate Change Impacts,” SDG Knowledge Hub.

<sup>29</sup> “NATO Stresses Climate Change Impacts,” SDG Knowledge Hub.

<sup>30</sup> “NATO Stresses Climate Change Impacts,” SDG Knowledge Hub.

<sup>31</sup> “SPS Programme History Timeline,” NATO Headquarters, <http://www.tiki-toki.com/timeline/entry/486360/SPS-Programme-History/>; “Environment Security.”

<sup>32</sup> “SPS Programme History Timeline,” NATO Headquarters.

<sup>33</sup> Environment – Nato’s Stake, “Environment Security,” North Atlantic Treaty Organization, last modified December, 9, 2014, [https://www.nato.int/cps/en/natohq/topics\\_91048.htm?](https://www.nato.int/cps/en/natohq/topics_91048.htm?)

<sup>34</sup> “Environment and Security (ENVSEC) Initiative,” Organization for Security and Co-operation in Europe Secretariat, last modified June 7, 2016, <https://www.osce.org/secretariat/ENVSEC>

<sup>35</sup> “Environment and Security (ENVSEC) Initiative,” Organization for Security and Co-operation in Europe.

<sup>36</sup> “Environment – Nato’s Stake, “Environment Security,” North Atlantic Treaty Organization, last modified December, 9, 2014, [https://www.nato.int/cps/en/natohq/topics\\_91048.htm?](https://www.nato.int/cps/en/natohq/topics_91048.htm?)

<sup>37</sup> Euro-Atlantic Disaster Response Coordination Center, “Historical Background,” North Atlantic Treaty Organization, last modified September 25, 2018, [https://www.nato.int/cps/en/natohq/topics\\_52057.htm?](https://www.nato.int/cps/en/natohq/topics_52057.htm?)

<sup>38</sup> “Environment Security,” North Atlantic Treaty Organization; “Historical Background,” Euro-Atlantic Disaster Response Coordination Center.

<sup>39</sup> “Historical Background,” Euro-Atlantic Disaster Response Coordination Center.

<sup>40</sup> “Historical Background,” Euro-Atlantic Disaster Response Coordination Center.

<sup>41</sup> “Historical Background,” Euro-Atlantic Disaster Response Coordination Center.

EADRCC conducts regular major disaster exercises in different participating Member States, along with at least one large consequence management field exercise a year since 2000.<sup>42</sup> Starting in 2016, virtual reality became a prominent feature in field exercises for the EADRCC along with other NATO divisions.<sup>43</sup> Over the last two decades, 48 Member States have participated in over 17 major disaster exercises.<sup>44</sup> EADRCC helps coordinate the responses to climate and natural disasters, and forwards assistance requests to NATO Member States and partner countries.<sup>45</sup> A partner Member State does not need to be a member of NATO to be able request assistance from NATO and its partners through EADRCC.<sup>46</sup>

NATO has assisted partner and non-partner Member States all over the world through EADRCC. In 1999, over 2,000 people in Turkey were killed by severe earthquakes while more than 80,000 people were affected.<sup>47</sup> All NATO Member States and 17 partner Member States responded to Turkey's request for assistance.<sup>48</sup> These Member States provided search and rescue teams, medical aid, sanitation equipment, and other supplies.<sup>49</sup> NATO, through the EADRCC, also helped Pakistan after the devastating earthquake in 2005, which killed an estimated 80,000 people and left up to three million people without food or shelter.<sup>50</sup> The EADRCC assisted Pakistan through airlifting needed supplies, special equipment, and deploying engineers and medical units for disaster relief.<sup>51</sup> During Hurricane Katrina in 2004, the EADRCC also provided aid to the US.<sup>52</sup> More recently, NATO has assisted with other natural disasters, such as helping to contain major forest fires in Georgia and Montenegro in 2017.<sup>53</sup>

Climate change has the potential to be severely detrimental to security, with extreme conditions and resource scarcity causing political upheaval, conflict, and mass migration.<sup>54</sup> Drought and other environmental risks also pose greater threats to Member States who are already at-risk of destabilization and also serve to worsen regions already impacted by conflict or destabilization.<sup>55</sup> Furthermore, it is difficult to predict the exact effects of climate-related disasters, the human response to these disasters, and the security risk involved.<sup>56</sup> NATO has already begun to address these issues with organizations such as the EADRCC, and climate-security conferences and strategic dialogues have become more prevalent in the previous ten years. Future environmental instability will call for an increased demand in security organizations including NATO in order to address such insecurities.

<sup>42</sup> "Historical Background," Euro-Atlantic Disaster Response Coordination Center.

<sup>43</sup> Euro-Atlantic Disaster Response Coordination Center, "Main Tasks," North Atlantic Treaty Organization, last modified September 25, 2018, [https://www.nato.int/cps/en/natohq/topics\\_52057.htm?selectedLocale=en](https://www.nato.int/cps/en/natohq/topics_52057.htm?selectedLocale=en)

<sup>44</sup> "NATO and civil emergency response: marking 20 years since the creation of the Euro-Atlantic Disaster Response Coordination Centre," North Atlantic Treaty Organization, last modified June 4, 2018, [https://www.nato.int/cps/en/natohq/news\\_155087.htm?selectedLocale=en](https://www.nato.int/cps/en/natohq/news_155087.htm?selectedLocale=en)

<sup>45</sup> Euro-Atlantic Disaster Response Coordination Center, "Support for National Authorities in Civil Emergencies," North Atlantic Treaty Organization, last modified September 25, 2018, [https://www.nato.int/cps/en/natohq/topics\\_52057.htm?selectedLocale=en](https://www.nato.int/cps/en/natohq/topics_52057.htm?selectedLocale=en)

<sup>46</sup> "Support for National Authorities in Civil Emergencies," Euro-Atlantic Disaster Response Coordination Center.

<sup>47</sup> "Support for National Authorities in Civil Emergencies," Euro-Atlantic Disaster Response Coordination Center.

<sup>48</sup> "NATO's Role in Disaster Assistance," Euro-Atlantic Disaster Response Coordination Centre, November, 2001, <https://www.nato.int/eadrcc/mcda-e.pdf>

<sup>49</sup> "NATO's Role in Disaster Assistance," Euro-Atlantic Disaster Response Coordination Center.

<sup>50</sup> "Pakistan earthquake relief operation," North Atlantic Treaty Organization, last modified October 27, 2010, [https://www.nato.int/cps/en/natohq/topics\\_50070.htm?selectedLocale=en](https://www.nato.int/cps/en/natohq/topics_50070.htm?selectedLocale=en)

<sup>51</sup> "Pakistan earthquake relief operation," North Atlantic Treaty Organization.

<sup>52</sup> "Statement by the NATO spokesman on support to the US in response to Hurricane Katrina," North Atlantic Treaty Organization, September, 4, 2005, [https://www.nato.int/cps/en/natohq/news\\_21470.htm?selectedLocale=en](https://www.nato.int/cps/en/natohq/news_21470.htm?selectedLocale=en)

<sup>53</sup> "NATO Allies and partners help Georgia fight major forest fires," North Atlantic Treaty Organization, last modified August 29, 2017, [https://www.nato.int/cps/en/natohq/news\\_146559.htm?selectedLocale=en](https://www.nato.int/cps/en/natohq/news_146559.htm?selectedLocale=en); "NATO provides swift forest fire assistance to new Ally Montenegro," North Atlantic Treaty Organization, July 19, 2017, [https://www.nato.int/cps/en/natohq/news\\_146283.htm?selectedLocale=en](https://www.nato.int/cps/en/natohq/news_146283.htm?selectedLocale=en)

<sup>54</sup> Charlie Iceland et al., "Its Not Just Capetown: 4 Shrinking Reservoirs to Watch," *Resource Watch*, last modified April 11, 2018, <https://blog.resourcewatch.org/2018/04/11/its-not-just-cape-town-4-shrinking-reservoirs-to-watch/>

<sup>55</sup> Iceland et al., "Its Not Just Capetown," *Resource Watch*.

<sup>56</sup> Dan Smith et al., "Climate Security: Making it #Doable," Clingendael Report 2019, Netherlands Institute of International Relations, [https://www.clingendael.org/sites/default/files/2019-02/Climate\\_Security\\_Makingit%23doable\\_0.pdf](https://www.clingendael.org/sites/default/files/2019-02/Climate_Security_Makingit%23doable_0.pdf), 150