



CLIMATE CHANGES AND THE MILITARY. HOW RECENT ENVIRONMENTAL MAJOR ISSUES COULD AFFECT THE NATIONAL DEFENCE STRATEGY

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The last decades of this century have been characterised by overwhelming effects of climate changes all around the world and in all areas of human activity, including national defence. Environmental extreme phenomena and global warming have strongly influenced and continue to affect the conduct of military actions, as well as the efficiency of some defence capabilities, somewhat turning them into vulnerabilities that could be subject to additional security threats and risks.

Therefore, this paper will focus on the main effects that climate changes could have upon the conduct of military activities, highlighting the most significant countermeasures at the allied and national levels. The research method is based on existing data analysis and evaluation of the recent climate phenomena and global warming, briefly touching on major events within the modern operating environment. The paper has some limitations due to little importance given to this new security risk/threat by many decision makers, military leaders and strategic planners, as well as the unclear strategies and implementing plans to counter it. Nevertheless, it represents a new decisive factor on the modern battlefield, which could either reinforce existing risks, or become a totally new one.

Keywords: *climate changes; extreme phenomena; global warming; big magnitude events; climate lens; Anthropocene Era; climate security.*

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Introduction

As per many security organisations' periodical risk assessments – including the UN, NATO and the EU –, the last couple of years have been characterised by more frequent and intense phenomena of extreme heat, catastrophic floods and dangerous clouds of volcanic ashes across Central and Southern Europe and the Western Balkans, as well as devastating wildfires and unstoppable storms in the Mediterranean region and North America. In this regard, more and more Allies, including Romania, have begun to reconsider the increasing interaction between climate change versus traditional security risks, recognising the fact that the scale and pace of climate-related challenges affect the modern operating environment.

Therefore, military leaders, having a strong conventional attitude, should raise their understanding of the complex, non-linear and co-evolving effects of climate changes on national, regional or even international security, in order to become a solution and not a problem in mitigating those effects to not affect citizens' lives, strain national resilience and pose direct or indirect challenges to the conduct of military operations. This task implies a thorough staff assessment of these challenges in each operational domain – land, sea, air, space and cyber –, as well as a continuous expert evaluation of the escalating effects on national resilience and the global security environment.

The staff assessment should address both the speed and scale at which the climate crisis continues to unfold, and the overwhelming urgency of addressing the root causes of climate change. It is worth mentioning here that a physical operating environment is possible to be altered by climate change, both directly or along indirect pathways.

1. Climate Change's Impact for National Security and Defence

There are many environmental experts and military researchers who consider that climate change has the potential to inflame an existing conflict through economic and social instability and increased violence or even start one. This assessment might also incorporate the status of the environmental objectives established at national and European/Euro-Atlantic levels, adopted also by the military, from which the main two represent the reduction of carbon emissions from fossil fuel and the transition to the 'green' energy.

This is why, the military experts' evaluation should take into consideration the most readily observed extreme weather events that are already putting pressure on critical military and civilian infrastructure and require additional military deployments to support civilian authorities. That demonstrates the fact that the escalating effects of climate changes would impact the national resilience and security, both at the



national level and in its broader neighbourhood. Climate-induced instability, large-scale population movements, and disruption of global supply chain are likely to alter the strategic environment in the medium and long term. Extreme weather events and global warming could also produce changes in key oceanic currents, or the collapse of agriculture system, fuelling a rapid deterioration of the national resilience (Stoltenberg 2024, 7).

It becomes crucial to understand the regional differences regarding climate vulnerabilities, as well as the fact that climate change exacerbates the strategic competition on resource scarcity and the scramble for the global commons. This strategic competition would exacerbate the pre-existing vulnerabilities of many different groups, resulting in bringing human security and Women, Peace and Security considerations to the forefront of the climate security discussions. In this respect, military forces might be required to adapt to hotter temperatures and increasingly more challenging, extreme and unpredictable operating environments, as well as to prepare for an increasing demand to assist civilian authorities when disasters strike (Stoltenberg 2024, 8).

Climate change is considered by many military thinkers as either a new threat at the national and European/Euro-Atlantic security, or a force multiplier of already existing risks and threats. This is the reason why there are some international relations debates to include the ‘ecoclimate¹’ perspectives as a strategic insight in its main preoccupations, in order to finally create a so-called ‘Climate Security²’ domain. Unfortunately, this approach would probably establish new contradictions on the North – South Axis, because of the ethics and moral existing rules inside the international system. Poor and undeveloped states will not have the capacity to adapt to climate changes’ effects, without a major support from rich/developed states and new international climate agreements accepted and implemented by all those states with high greenhouse gas emissions.

Therefore, the EU and its Member States and Partners take into consideration an increased role of the UN to include climate changes in international relations, by establishing a collaborative network between private sector, civil society and research institutions in order to share information and knowledge, find new innovative solutions, exchange good practices and establish common aims and goals in the relationship between climate change and security. Some already existing links,

¹ According to the 3rd NATO Climate Change and Security Impact Assessment of 2024, no region of the World or operational domain will be untouched by climate change. This is why NATO will remain determined in its collective ambition to better understand, adapt to, and mitigate the effects of climate change on Allied security.

² As per the Webster dictionary, ecoclimate is a new approach of climate as an ecological factor and represents “the actual climatic condition of a habitat”, site <https://www.merriam-webster.com/dictionary/ecoclimate>, accessed on 9 September 2024.



such as the Intergovernmental Panel on Climate Change (IPCC)³, the Nordic-Baltic Network on Climate, Peace and Security⁴, or the Middle East NATO Liaison Office in Amman, could be used at the beginning for attracting more and more state and non-state actors. Moreover, the UN should support all regional and international projects related to climate changes, like the UN Framework Convention on Climate Change (UNFCCC)⁵, the Paris Agreement⁶, or the OSCE project on climate change and security in Eastern Europe, Central Asia and the Southern Caucasus⁷ and encourage other organisations to start new projects with the same importance and topic.

2. Climate Change's Effects in the Military Domain

Why it is important for military leaders and strategic planners to study climate change and its effects on security or on creating insecurity for humans? First of all, it is the scientific theory of the so-called 'Anthropocene Epoch' (see Figure no. 1), in which the humanity (Homo sapiens), through its continuous expansion and vast activities, began to alter the surface of the Earth, its atmosphere, oceans and systems of nutrient cycling. Being considered after 1950s, this era is characterised by an

³ Climate security refers to “the direct and indirect impacts of the climate crisis on peace and security, where climate change acts as a threat multiplier, exacerbating underlying vulnerabilities and compounding existing grievances. The consequences of climate change affect all areas of human security (economic, food, health, environmental, personal, community and political) and undermine conflict prevention, sustaining peace and sustainable development efforts with a disproportionate impact on communities with existing vulnerabilities, including migrants, women and girls, children, youth, older persons, persons with disabilities and indigenous peoples”, site <https://environmentalmigration.iom.int/climate-and-security>, accessed on 9 September 2024.

⁴ IPCC is the UN body for assessing the science related to climate change and providing comprehensive Assessments Reports about the state of scientific, technical and socio-economic knowledge on climate change, its impacts and future risks, and options for reducing the rate at which climate change is taking place. It also produces Special Reports on topics agreed to by its member governments, as well as Methodology Reports that provide guidelines for the preparation of greenhouse gas inventories. Site <https://www.ipcc.ch/>, accessed on 9 September 2024.

⁵ The Nordic-Baltic Network on Climate was established in 2021, by 12 research institutes in order to establish a suitable knowledge base on climate, peace and security issues in the Nordic and Baltic regions. Site <https://www.nupi.no/en/news/new-nordic-baltic-network-on-climate-peace-and-security-established>, accessed on 9 September 2024.

⁶ UNFCCC is a multilateral treaty adopted in 1992 to stabilize greenhouse gas concentrations “at a level that would prevent dangerous anthropogenic (human-induced) interference with the climate system.” Every year, countries who have UNFCCC meet in a UN Climate Change Conference (COP) to measure progress and negotiate multilateral responses to climate change. Today, there are 198 Parties to the Convention. Site <https://www.un.org/en/climatechange/un-climate-conferences>, accessed on 9 September 2024.

⁷ The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at the UN Climate Change Conference (COP21) in Paris, France, on 12 December 2015. It entered into force on 4 November 2016. Site <https://unfccc.int/process-and-meetings/the-paris-agreement>, accessed on 9 September 2024.



increasing role of technology and fossil fuel-based energy, as well as concentrations of pollutants in the atmosphere – especially of carbon monoxide (CO2) –, reaching a level where the ecosystem can no longer absorb them. In turn, those characteristics generated the relevant climate changes, which has a major negative effect on temperature cycles, the water cycle in nature and the interdependence between plants, animals, bacteria and the human species (Rafferty 2024).

From ancient times the human behaviour has directly and indirectly altered their habitual space, sometimes with disastrous consequences for the future of humanity and survivability of some other species, resulting in a pronounced global insecurity. This aspect led us to the next important aspect of studying climate change in the military. It is related to the idea that the Armed Forces are usually involved in causing negative climate effects on the operational environment both during training activities and conducting military operations. Therefore, we can consider military leaders as being part of Anthropogenic Geopolitics and some of them even obstruct Allied and European climate policies (Vogler 2024).

Eonothem/ Eon	Erathem/ Era	System/ Period	Series/ Epoch	Stage/ Age	millions of years ago
Phanerozoic	Cenozoic	Quaternary	Anthropocene ¹		1950 CE
			Holocene		0.0117
			Pleistocene	Upper	0.126
				Middle	0.781
				Calabrian	1.806
	Gelasian	2.588			

¹In August 2016 the Anthropocene Working Group (AWG), a special body created within the International Commission on Stratigraphy (ICS), recommended that the Anthropocene Epoch be made a formal interval within the International Chronostratigraphic Chart. The AWG recommended that the year 1950 be used as the starting point of the Anthropocene Epoch.

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Figure no. 1: The Quaternary Period, reconfigured to accommodate the Anthropocene Epoch⁸

⁸ The project “Climate Change and Security in Eastern Europe, Central Asia and the Southern Caucasus” aims to enhance understanding and awareness of climate change as a security challenge and the consequent need for regional and transboundary co-operation in adaptation; and to enhance national and local stakeholders’ capacity to anticipate, prevent and mitigate effectively and in a timely manner potential security risks resulting from climate change. Site <https://www.osce.org/projects/climate-change-and-security>, accessed on 9 September 2024.



It is worth mentioning another important aspect linked to some ambiguous measures underpinned by military leaders to mitigate climate changes and their impact in the modern operating environment. Their effects led to environmental protection and are less efficient in countering the climate change's effects on actions of Armed Forces. Thus, a new Anthropocene security dilemma has been created, in which the conduct of military operations, even in self-defence and of short duration, aggravates long-term existential threats (Vogler 2024, 3). This is the case of the last military experiments with Weapons of Mass Destruction, lasers or ecological weapons, as well as the militarisation of the Arctic and the weaponisation of outer space, with disastrous effects for the environment and the future existence of humanity. The same disastrous effect is the conduct of combat actions in the framework of the Russian-Ukrainian war near the Ukrainian nuclear power plants and the use of these critical energy infrastructures as military objectives, despite the prohibitions provided by international laws and conventions. Only recently policy decision-makers, businessmen and climatological experts understood the fact that human prosperity is strictly linked to protecting life on our planet, avoiding human extinction. As André Hoffmann, one of the Davos Group leaders mentioned at the World Economic Forum meeting of January 2024, "We are seeing the limit to the system more and more. If our growth is not contained within planetary limits, we are just going to outgrow the system, and that's not going to be beneficial in the long term" (Feingold 2024).

Finally, the involvement of regional security organisations and their Member States in analysing the impact of climate change in the military field is a relatively recent action that is gaining more momentum each year. There are already senior military officials and climate advisors who consider climate change as having serious implications for national security. They nominate among the global effects of climate change the warmer climate, changing precipitation patterns and, more frequently, intense and unpredictable extreme weather. "Climate change is dramatically increasing the demand for military operations and, at the same time, impacting our readiness and our ability to meet those demands while imposing unsustainable costs on the department. Our climate investments are not only aligned with mission objectives, increasing resiliency and enhancing combat capability, but those investments are absolutely necessary for future mission success..." (Vergun 2022).

The increasing importance of climate change in our lives is highlighted by the "Global Risk Report 2023 (18th edition)" of the World Economic Forum (WEF) of 11 January 2023, in which there are analysed the most dangerous risks the humanity will encounter in the next decade (see Figure no 2).



Figure no. 2: Top 10 risks and their likely impact in 2 and 10 years⁹

As we are at the edge of an era of low economic growth and low cooperation, tougher compromises could risk to erode the climate action, human development and future resilience. Thus, in its report, WEF ranked ‘extreme weather’ first in the top ten risks in terms of probability of occurrence and ‘climate action failure’ ranked first in terms of impact – ahead of ‘weapons of mass destruction’, ‘cyber attacks’ and ‘infectious diseases’. As a result, extreme weather and the failure of measures to counter climate effects are determining characteristics in the risk matrix, being catalogued before the economic, societal and technological categories (World Economic Forum 2023, 11).

Therefore, the need to analyse, forecast and counter the effects of climate change on the military domain of security has gained a major importance, being considered on the same level as military conflicts, the proliferation of WMD and terrorism. Furthermore, there are international relations theorists who wish to introduce the concept of ‘climate security’ into climate-related policies. Other experts in ecoclimatic phenomena are trying to establish a causal relationship between climate change and regional military conflicts, considering that some consequences of the

⁹ Source: <https://www.britannica.com/science/Anthropocene-Epoch>

former accelerate the risks of instability and the emergence of the latter, such as competition for resources or climatological migration, caused by rising seas, floods massive or prolonged drought. Thus, this is also situated in the area of ‘climate security’. There are military and civilian experts who include, among other climate-induced threats to humanity, pandemics and epidemics of vector-borne diseases such as contaminated insects and water (Kamradt-Scott, et al. 2015).

At the 57th Session of the UN Council for Human Rights of 9 September 2024, the UN High Commissioner for Human Rights, Mr. Volker Türk, subjected to the attention of participants the future of humanity, mentioning that the world is now at a ‘crossroad’ and is going, if not careful, to a ‘dystopic future’: “we can continue either on the current pathway – a new dangerous normality’ – which directs us, as sleepwalking towards a dystopic future, or we can wake up and turn the course of things for our goods, for humanity and the Planet” (Gaidau 2024). The current normality, which should be collectively rejected, is characterised by the military escalation, repression and disinformation, injustice, climate change that affects especially those who are less responsible, and human rights abuses in the name of national sovereignty.



Figure no. 3: Most prominent impacts of climate change on security¹⁰

¹⁰ Source: <https://www.weforum.org/publications/global-risks-report-2023/digest/>



There are certainly some consequences of the impact of climate change on the National Defence Strategy (see Figure no 3). One of them is represented by the increase in importance, size and number of the Armed Forces' operations and missions in support of local authorities and the affected population. In the case of extreme phenomena, military forces are required to conduct more search and rescue, humanitarian assistance and disaster relief operations, both nationally and internationally. This is because the scale of these extreme phenomena exceeded, in many cases, the possibilities of intervention of the civil protection and law enforcement forces, and involves the establishment, in some states, more often affected by floods, fire, drought and heatwaves, of military capabilities for rapid intervention in disasters. At the same time, the exchange of good practices and greater interoperability between the forces destined to ensure the military response to natural disasters has been intensified, especially for neighbour countries or those who have special partnerships.

An additional consequence can be considered the challenge facing planners who must understand that the main operational dilemma of the current operating environment is not represented by the establishment of direct link between climate and conflict, but in the ability of climate change to disrupt/destroy the systems that provide stability and human security. Solving this dilemma is the way to achieve national resilience in its entirety both by duplicating natural systems and by preserving those that ensure governance and the continuation of the activity of local institutions and systems.

Some Conclusions for Romania and its Armed Forces

In Romania, the first ideas regarding climate change and how it affects the Romanian Armed Forces were developed as early as the 2010's in the form of 'climate security'. Of course, this was not a common term in the eyes of military theorists and Romanian researchers. In its 2010 definition, climate security was considered the minimization of climate instability, and this does not put humanity in conflict with nature, because human beings are part of nature, of the global ecosystem (Dutu 2010). As a result, it is possible that precisely the lack of adequate conceptual tools is the most important obstacle in the case of identifying solutions for global problems such as climate change.

In order to respond to the recent international and regional approach on climate change, Romania developed, in 2016, the "National Strategy regarding climate change and economic growth based on reduced emissions" adopted by the Government Decision no. 739/2016 and, in 2021, the "Integrated National Plan in the field of Energy and Climate Change 2021-2030 (PNIESC)", documents whose main objective is to reduce greenhouse gas emissions by approximately 44% by 2030, compared to the year 2005.



Based on the “NATO 2030 Agenda for Sustainable Development” and the “NATO Climate Change and Security Action Plan”, the Romanian Defence Minister established, in 2022, a Working Group dedicated to addressing climate change in the field of defence and energy transition, and released the “Strategy regarding the preparation of the Romanian Armed Forces to address climate change and the energy transition” in 2023, which targets a 50% reduction in greenhouse gas emissions by 2040 (Directia Informare si Relatii Publice a MApN 2023).

However, nothing would happen regarding the materialisation of the objectives set by strategies and the implementation of plans both at the Alliance, the EU and national levels, without effective inter-institutional, European and Euro-Atlantic collaborations and a real comprehensive approach, in which civil society, the environment business and the research and development community will have an increased role. The realisation of the commitments assumed by the states on climate change issues should continue in an accelerated way, and the Allied Armed Forces should cultivate a responsible attitude and an ‘eco-climate culture’ regarding the reduction of the effects of climate change within the military actions they would perform in the future operating environment, including reducing carbon emissions and increasing defence energy efficiency.

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