

Climate change considerations for EU security and defence policy

SUMMARY

The risks climate change poses to global stability and international security are becoming increasingly palpable. Today, in Europe and beyond, countries are increasingly aware of the challenges entailed by global warming and environmental degradation. The European Union has been at the forefront of raising climate concerns for over two decades. Among the sectors affected, security and defence is not spared: climate change not only acts as a threat multiplier, but also impacts capabilities and operational considerations.

In the field of security and defence, the changing environmental conditions are creating a necessity for international actors, including the EU, to expand their conflict prevention tools, including defence-related instruments, and reassess existing policies in the light of new realities. In that context, the EU is in a process of reconceptualising the link between climate change and defence, and is endeavouring to increase renewable energy use, foster energy efficiency, reduce the carbon footprint of the defence forces, and avoid exacerbating climate-induced conflicts and crises. The European Green Deal, along with the 'concept for an integrated approach for climate change and security', the climate change and defence roadmap and initiatives like the Strategic Compass, are setting ambitious goals for the EU's external and climate action for years to come.

The European Parliament's Committee on Foreign Affairs has adopted a report welcoming the climate change and defence roadmap. Among other things, the report underlines the link between climate change and state fragility; emphasises that the armed forces need to be more energy efficient; and calls for the climate-security nexus to be included as a new priority area for the United Nations–European Union strategic partnership on peace operations and crisis management. Members are due to vote on the report during Parliament's plenary session in June.



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Climate change and security threats

The objective of addressing climate change is embedded in [Article 191\(1\) TFEU](#) as a concept to be promoted in the Union's external action. The 2016 [EU Global Strategy](#) states that 'climate change and environmental degradation exacerbate potential conflict, in light of their impact on desertification, land degradation, and water and food scarcity'. The strategy considers climate 'a threat multiplier that catalyses water and food scarcity, pandemics and displacement'.

In 2021, the [Intergovernmental Panel on Climate Change \(IPCC\)](#), the United Nations (UN) body for assessing the science related to climate change, issued a [report](#) on the impacts of global warming. The report says that global warming of 1.5 °C is likely to be exceeded in the 21st century and that the risks of such warming for natural and human systems would be major and asymmetric. For example, at 2 °C of global warming, greater proportions of people would be exposed and susceptible to poverty in Africa and Asia. In the same vein, the 2021 [Global Risks Report](#), released by the World Economic Forum, states that the key threats of the next decade will be 'cyberattacks, weapons of mass destruction and, most notably, climate change'. According to the Global Risk Perception Survey appended to the report, climate action failure forms the second most likely long-term risk with the highest impact. The IPCC report finds that climate change will lead to disaster-related displacement and the disruption of supply chains, and that water scarcity will increase with droughts costing [€65 billion](#) by 2100. Furthermore, competition over food and resources will amplify and environmental degradation and weather extremes will affect public health. Analysis of weather events suggests that [85 % of the world population](#) has already been affected by climate change.

This has serious implications for peace and security. The [2020 World Climate and Security Report](#) issued by the International Military Council on Climate and Security identifies at least five key risks that security professionals foresee under the current circumstances:

1. water insecurity exacerbated by climate change;
2. increased likelihood of conflict affected by climate change;
3. effects of climate change on military infrastructure and military operations;
4. potential second-order negative effects of climate mitigation strategies – such as geoengineering – on global security, if not implemented carefully;
5. the rise of authoritarianism, protectionism and nationalism, undermining international cooperation to address the security risks generated by climate change.

In short, climate change as a risk to global security is here to stay. The consequences of climate change severely aggravate fragility, conflict dynamics and economic vulnerabilities, threatening peace and security across the world. Additionally, climate change has [implications for military](#) and civilian personnel globally, and threatens military transport and energy [infrastructure](#).

EU policy in the face of multiplying climate-security links

The [European Green Deal](#) (EGD), presented in December 2019 by the von der Leyen Commission, is designed to make Europe the first climate-neutral continent by 2050. As the EU's new growth strategy, it makes climate action an unprecedented priority. Beyond its extensive programme for EU-internal action, the EGD aspires to strengthen the EU as a [global leader](#) in fighting climate change. The communication on the EGD recognises the link between global environmental challenges and security, indicating that climate change is a significant threat multiplier and source of instability. It asserts that 'the ecological transition will reshape geopolitics, including global economic, trade and security interests. This will create challenges for a number of states and societies'. Consequently, the EU has committed to 'work with all partners to increase climate and environmental resilience to prevent these challenges from becoming sources of conflict, food insecurity, population displacement and forced migration, and support a just transition globally'.

The EGD consolidates the commitment to make climate policy an integral part of EU external action – including in security and defence.

In the context of the EU Global Strategy, the 2019 Council [conclusions on security and defence](#) underlined the implications of climate change for sustainable security. Already in 2013, the EU's [comprehensive approach](#) to external conflict and crises had identified climate change as an essential factor to consider in all stages of the conflict cycle and as a global issue 'where the external aspects of internal EU policies have a growing foreign and security policy dimension'. Ever since, there have been efforts to integrate climate security concerns in a range of areas, from early warning and preparedness, conflict prevention, crisis response and management, to early recovery, stabilisation and peace building. Following the 2019 IPCC [special report](#) on climate change and land, the Foreign Affairs Council reaffirmed the threat posed by climate change to peace and security, and [recognised](#) climate change as an existential threat. The Council emphasised that conflict prevention tools, such as the [EU conflict early warning system](#), should take into account the security challenges linked to adverse effects of climate change and environmental risk factors and strengthen the link between early warning and early action. The second annual [conference](#) on climate change and defence, organised by the European External Action Service (EEAS) in December 2021, discussed ways to strengthen 'climate resilience' by combining existing data collection with climate-informed investment.

Climate change and defence: A changing landscape

The EU's defence ministers first [discussed](#) the implications of climate change in August 2019. Yet, already in 2008, the High Representative for the Common Foreign and Security Policy and the Commission had published a [paper](#) framing climate change as an issue to be addressed by the EU's security and defence policy. As a result of the climate crisis, the EU's defence sector needs to adapt to a changing geopolitical context of increasing strategic rivalry, deprivation-fuelled conflicts, forced migration and extreme environmental conditions.

Climate change and defence roadmap

In early 2020, the Council [conclusions](#) on climate diplomacy reiterated the need to bring climate factors into the security debate. In June 2020, the [conclusions](#) on security and defence invited the High Representative/Vice-President of the Commission (HR/VP) Josep Borrell to address the climate change-defence nexus through a set of practical short-, medium- and long-term measures. In response, the EEAS prepared a [climate change and defence roadmap](#) in cooperation with Commission services and the European Defence Agency (EDA). The roadmap contributes to the wider agenda of the EU. As the EEAS [working document](#) of November 2020 suggests, the climate-security nexus influences the role of the EU as a global leader in combating climate change. The roadmap also complements broader aspirations to ensure greater energy efficiency of defence equipment and lesser dependence on external entities. The roadmap fits within the wider EU toolbox, along with the climate diplomacy policy framework and the [concept for an integrated approach on climate change and security](#).

Energy considerations

The third phase of the Consultation Forum for Sustainable Energy in the Defence and Security Sector, hosted by the Slovenian Ministry of Defence in November 2021, [discussed](#) the use of hydrogen to the benefit of the EU defence sector, and the place of EU security and defence in the EGD and the 'fit for 55' package.

The European Defence Fund already [contains](#) a section on energy efficiency and environmental transition, including military camps, electrical energy storage for military bases, and alternative propulsion and energy systems for air combat systems.

Central to EU climate policy, the roadmap assesses how the Member States can contribute by improving national climate and environment capabilities, data collection and energy efficiency, and includes three interwoven areas of action:

1. the operational dimension
2. capability development
3. stronger multilateralism and partnerships.

Strategic Compass: Addressing the climate-security link

In March 2022 the Council of the EU adopted the [Strategic Compass](#), which was subsequently endorsed by the EU leaders. The compass is designed to create a shared strategic vision concerning security challenges, including climate, and to translate that vision into courses of action and deliverables. As part of the Strategic Compass, the [threat analysis](#), a classified report examining key global and regional trends, conducted in November 2020 by the EU-27, notes that there is 'potential for ... climate-related factors affecting national and regional stability'. Climate change is mentioned 17 times in the Compass, with frequent reference to its 'threat multiplier' effect. Among the numerous suggested actions, the document puts forward proposals for the EU's defence sector, such as greater energy and resource efficiency, including the aim to reduce the environmental footprint of common security and defence policy (CSDP) missions, in line with the EGD, while maintaining operational effectiveness. It also commits the Member States to develop own national strategies to prepare their armed forces for climate change by 2023; it proposes deployment of an environment advisor in all CSDP missions by 2025; and it reiterates the role of climate change in bilateral and multilateral frameworks. The Compass also highlights the role of green technology and sustainable digitalisation within the armed forces and the defence sector. Climate change is meanwhile also addressed in the resilience and partnership pillars of the EU's plans under the Compass, including as a key topic of cooperation with multilateral and regional partners in security and defence (e.g. in the EU-US strategic dialogue on security and defence).

On 15 February 2022 the European Commission published a [communication](#) on the **Commission's contribution to European defence**, outlining its input to the Strategic Compass. The communication reaffirms the function of climate change as a threat multiplier and notes that in 2021 alone €133 million were committed to a specific call to support research and development of defence technologies and products addressing climate-related issues under the [European Defence Fund](#). The Commission has committed to present a first annual progress report on the climate and defence roadmap together with the EEAS and the EDA in the first half of 2022, not yet issued at the time of writing. It will also explore the potential to enhance the impact of energy-related directives on military infrastructure, and seek to step up work on the climate-security-defence nexus with counterparts, including the North Atlantic Treaty Organization (NATO), the UN, the US and Canada.

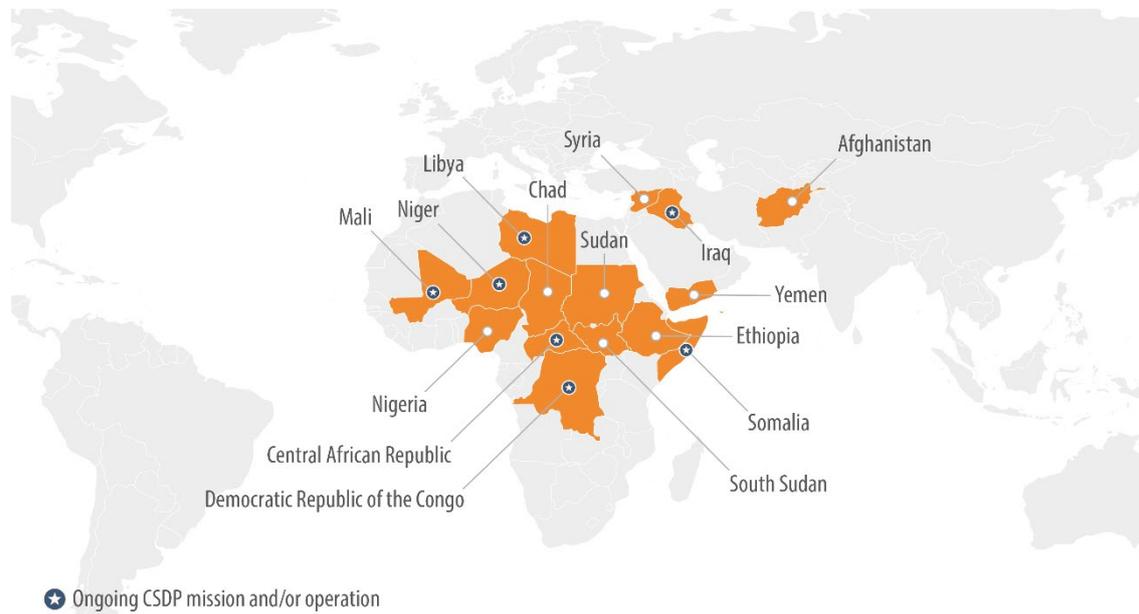
Operational dimension

Both decision-makers and capability planners should possess anticipatory intelligence and an accurate understanding of the security implications of climate change. These determine the type of mission, frequency of deployment and capability the EU will need. The intensification of extreme weather conditions, rising sea levels and increasing global temperatures will for instance affect maritime security. Climate change might also lead to higher demand for civilian and military CSDP missions in disaster management and humanitarian relief. In the **short term** (2020-2021), the EEAS will strive to enhance synergies between existing tools and instruments by evaluating how relevant actors can foster situational awareness and understanding, strengthen the links between early warning, analysis and actions, and develop strategic foresight capabilities. Furthermore, the EEAS will develop an 'operational concept' on climate change and work on its crisis management toolbox. Operational guidelines and standard operating procedures will be developed to cover climate and environmental aspects, addressing duty of care, awareness raising and carbon footprint management. The EEAS/EU Military Staff, jointly with the Commission, will evaluate methods to nurture humanitarian civil-military cooperation, including preparedness and response to natural and humanitarian disasters. The EEAS will also assess the potential to fund necessary CSDP support

projects through the [European Peace Facility](#). In the **medium term** (2022-2024), the EEAS will develop standard operating procedures without diminishing the operational effectiveness of CSDP activities. Data and best practice regarding energy efficiency in CSDP missions will also be collected to ascertain where energy dependencies could be minimised.

Some of the most climate-vulnerable countries are situated in regions of conflict and fragility. It follows that CSDP missions and operations are often [deployed](#) in countries that are negatively affected by climate change. Currently, CSDP missions are active in Mali, Libya, Niger, Somalia, Iraq and Central African Republic, which are among the 15 countries most vulnerable to climate change.

Figure 1 – The 15 countries most vulnerable to climate change, and active CSDP missions



Data source: [Normandy Index 2021](#).

The instability and crises addressed by the missions result directly or indirectly from factors multiplied by climate change. [Operation Atalanta](#), for instance, protects food aid shipments from the [World Food Programme](#) for the Somali population. The food and nutrition crisis in Somalia is, inter alia, the result of floods and droughts. In 2019, the EU's defence ministers [discussed](#) how threats posed by climate change could be further integrated into the CSDP, focusing on two issues: ensuring that the military presence contributes to addressing climate change issues, and incorporating the effects of climate change in planning military operations and in foresight. Experts generally [agree](#) that climate is one of three broad trends that will shape the upcoming CSDP missions and operations. Although these are likely to be deployed in climate-affected regions, the reason for their deployment may not be directly linked to climate; nevertheless tasks – not least border management and control missions – might experience increased demand and greater instability linked to climate change effects. Military equipment that is ill-adapted to extreme heat waves could further undermine the effectiveness of international efforts. Here, dependence on fuel poses additional security risks. Experts from [Carnegie Europe](#) argue that present CSDP missions still lack necessary climate-related elements. Nevertheless, following a large number of formal commitments and agreements, some headway has been made. The Commission [recognises](#) climate and environment as complementary to the objectives of the CSDP missions. Although the [civilian CSDP compact](#) does not mention climate, it does envisage specific training needs that could be linked to climate conditions. The CSDP missions to Mali, Central African Republic and Somalia already benefit from the presence of an environment security expert. Given the [environmental dimension](#) of the current and future CSDP mandates, in September 2020 the European Parliament adopted a [resolution](#) concerning the CSDP operations in Sahel, West Africa and the Horn of Africa, in which it highlighted climate as a 'risk factor for destabilisation, violence and conflict'.

Capability development

Climate change introduces new risks that call for equipment that is operational under extreme weather conditions, as well as more energy efficient technology. To ensure a high degree of readiness and sustainability, increased energy resilience is fundamental. There are operational advantages to reducing the emissions and environmental impacts of CSDP civilian and military missions and operations (e.g. reduced dependence on supply convoys and logistical requirements). Moreover, minimising resource use, environmental degradation and pollution may prevent conflict in mission areas suffering from resource scarcity. In the **short term** (2020-2021), the EEAS, EDA, and relevant Commission services will work with the [European Security and Defence College](#), as well as other training providers, to include climate aspects in EU training courses. Green public procurement options will be considered as a way to secure more sustainable procurement for military infrastructure. In the **medium term** (2022-2024), in cooperation with the Commission, the EEAS/EU Military Staff (EUMS) will propose ways to address major climate-induced risks. Member States will be encouraged to improve resilience and operational efficiency by developing new technologies, partially through [permanent structured cooperation](#). To reduce the environmental footprint of the defence sector, research and development may be funded under the [European Defence Fund](#), to improve energy generation, storage, efficiency and overall management. Resource efficiency, for example the possibilities for a circular economy, will also be explored. Through the [Connecting Europe Facility](#), the Commission will support environmentally sustainable dual-use transport infrastructure projects that facilitate military mobility. Moreover, the EDA is planning an '[incubation forum](#)' on circular economy in European defence (IF CEED) to address issues of waste management, component tracing, water management, safe use of chemicals, and resource inputs, involving repair, maintenance, reuse, and refurbishing and recycling, for instance.

United States' approach

In 2021 the United States [reassessed](#) its foreign policy objectives and the means to achieve them, in the context of climate crisis. A [national intelligence estimate](#), which elaborates on the impact of climate change on US national security, draws three broad conclusions: tensions will rise globally as states argue about emissions reductions; climate change will intensify strategic power competition (foremost in the Arctic); and developing countries will suffer the most owing to a lack of resources and adaptability.

The [climate adaption plan, released](#) by the Department of Defense (DoD) in October 2021, aims to ensure the DoD's functioning against the backdrop of an evolving climate, degrading defence infrastructure and amplifying operational demands. It focused on climate-conscious assessment and decision-making, the adaptability of contingency planning and military exercises to extreme weather and terrain conditions, and infrastructure flexibility. The climate change factor is to be part of supply chain assessment (e.g. fuel, power requirements) and the overall readiness of intergovernmental cooperation is to be enhanced. To realise these objectives, the DoD is intending to leverage its defence climate assessment tool and [climate risk analysis](#). As for international engagement, the DoD will work closely with allies and partners to advance NATO's [climate change and security agenda](#), deliver assistance in response to climate-affected crises, and counter malign actors wishing to exploit climate change to gain influence. The Biden administration's [return](#) to the Paris Agreement on climate change, and general [re-prioritisation](#) of climate change as a central policy issue, signalled the return of the US as an ally in multilateral cooperation. An [executive order](#) issued in January 2021 stated that climate considerations would be 'an essential element of United States foreign policy and national security'.

Stronger multilateralism and partnerships

The EEAS supports international organisations and third countries in addressing the relationship between climate change and civilian-military missions. Furthermore, a structural exchange has been established on the climate, energy and environmental aspects of missions and operations with relevant UN counterparts. Staff-to-staff dialogues with NATO are employed to evaluate possible areas of cooperation in this interlinked domain. Further prospects for cooperation with the African Union have been explored, and the EEAS and Commission services have examined the prospects of supporting African partner countries' response capacity to disasters, drawing on the EU's climate diplomacy tools. In the **medium term** (2022-2024), the EEAS will work towards strengthening the UN-EU strategic partnership on peace operations and crisis, including climate change and environmental stresses in the revised priorities; areas that both organisations perceive as crucial. In the context of the EU's multilateral efforts, environmental aspects will be built into EEAS security and defence policy dialogues with third countries. Moreover, to increase understanding of how climate change and environmental degradation affect defence, the EEAS will widen its network of research bodies and humanitarian organisations. In the **long term** (2025 onwards), the EU and its Member States will foster leadership in the international environmental policy debate, and work towards merging elements with the nationally determined contributions. In the long run, future policies and initiatives, such as the Strategic Compass (see box) and the international dimension of the [new climate adaptation strategy](#), will influence the EU's approach to climate security.

NATO

NATO, a key EU security partner, [acknowledged](#) the effects of climate change on the Allied security environment already in its [2010 strategic concept](#) and the [2014 green defence framework](#). The 2021 [climate change and security action plan](#) highlights the impact of climate change on the functionality and execution of military missions. NATO foreign ministers endorsed this 360-degree approach, which entails mitigation measures, safety guidelines for military personnel, and enhanced credibility of deterrence posture. Moreover, climate change and security remain at the core of the '[NATO 2030](#)' agenda, as highly interconnected factors affecting global security. The first climate change and security progress report will be [released](#) at the 2022 NATO Summit, along with the revised [NATO strategic concept](#). Furthermore, NATO Secretary General Jens Stoltenberg has [announced](#) that NATO is committed to reducing military emissions and contributing to achieving net zero carbon emissions by 2050.

European Parliament position

On 15 March 2022, the European Parliament's Committee on Foreign Affairs (AFET) adopted a [report](#) on the 'roadmap' (rapporteur: Thomas Waitz, Greens/EFA, Austria), asserting that climate change must be viewed as a new security challenge, together with hybrid and cyber threats.

The report refers to the EDA's data on the energy consumption of military infrastructure and buildings and of the armed forces more widely; as well as on the role the military technology industry plays in carbon emissions. It also notes that the defence sector is not mentioned in the Paris Agreement, leaving it up to national governments to decide whether to include the sector in their international climate commitments. While welcoming the climate diplomacy policy framework, the climate and defence roadmap, and the concept for an integrated approach on climate change and security, the report urges the HR/VP to harmonise the EU concepts and calls for a progress report by June 2023 and an assessment of the carbon footprint and environmental impact of the EU's external action by mid-2023. The AFET report also calls for implementation of the roadmap's three strands, including through the creation of relevant structures at Member State level. On capability development, the report supports greater investment in 'green' defence, including through research and development funded from the EU budget, to be allocated to carbon-neutral fuels and propulsion systems for military aircraft, ships and other vehicles, especially with regard to major weapons systems (e.g. the [future combat air system](#) and the [European main battle tank](#)). The report

emphasises that that an increase in defence expenditure should not lead to an increase in emissions. AFET also underlines the link between climate change and state fragility; emphasises that the armed forces need to be more energy efficient; and calls for the climate-security nexus to be included as a new priority area for the UN-EU strategic partnership on peace operations and crisis management.

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