

The Security Sector and Climate Change

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Executive Summary

- ▶ National security sectors and multilateral security institutions are under pressure to (re)assess their own relationships with climate change and related security risks, in terms both of their own contributions to mitigating the disruptive effects of climate change and in relation to how climate change affects their habitual modes of operation, their strategies, and their use of resources.
- ▶ Security sector governance and reform (SSG/R) as a policy and normative approach has the potential to support the security sector and policymakers at national and international levels to navigate current and future climate security challenges by strengthening security provision that is both effective and accountable in the context of climate change adaptation and related security risks.

States and international organizations have been slow to acknowledge that climate change is affecting not only economic, energy, and development policies and practices but also has far-reaching security implications. While the recent Climate Adaptation Summit (January 2021) did not acknowledge security explicitly as an area of action, it did so indirectly by stressing the needs to strengthen the resilience and sustainability of economic, agricultural, food, health, and water management systems, to protect biodiversity and the environment, and to improve disaster risk management to cope with extreme climate-related hazards. But these areas of action are also at the core of the climate–security nexus and failing to tackle them may put at risk the social, economic, and political stability of communities, States, and even entire regions. Although there is empirical evidence that climate change has become intertwined with all aspects and levels of security, policy discourses and action on climate–security linkages are only slowly gaining traction. A lack of international consensus on the appropriateness of framing climate change as a security issue and a lack of political will on climate action in general at the

national level, coupled with cautious attitudes towards the dangers of securitizing climate change (Buzan, Waever & Wilde 1998; Dietz et al. 2016) and a separation between environmental and security policy communities, are factors that might explain this slow response. Nevertheless, as people’s experiences of extreme weather phenomena, along with growing public awareness about the adverse effects of climate change, have become part of daily life, a more tangible sense of urgency has arisen. This perception has been heightened by the COVID-19 global pandemic, which has sensitized the world to the complexity of threats posed by non-conventional security crises. Furthermore, as more scientific knowledge has become available on the links between climate change and security, there has been greater readiness by policymakers to engage more consistently with the security implications of a changing climate, a trend that began a decade ago.

The global community could find itself at a historical crossroads where climate change as a non-conventional security challenge is about to enter mainstream security thinking and planning. For instance, the [European Union’s Green Deal](#) defines



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“global climate and environmental challenges as significant threat multipliers and sources of instability”, acknowledging that the current process of ecological transition will also have geopolitical repercussions for the security interests of state and non-state actors. The [EU’s Climate Change and Defence Roadmap](#) (9 November 2020) represents a new policy move that brings together civilian and military areas of action, including under the Common Security and Defence Policy (CSDP). Similarly, in his [speech](#) on 2 December 2020, the UN Secretary-General António Guterres stressed the magnitude of the ongoing global climate and environmental crises, highlighting not only their immense implications for development but also the existential threat they pose to small island states and their disproportionately negative impacts on vulnerable groups, such as Indigenous peoples, youth, and women. The new US administration has also put the climate crisis at the core of US foreign policy and national security, with its [Executive Order on Tackling the Climate Crisis at Home and Abroad](#) (27 January 2021) stating that “there is little time left to avoid setting the world on a dangerous, potentially catastrophic, climate trajectory”.

This policy brief discusses the climate–security nexus in terms of its implications for the security sector and related governance and reform processes. Section 1 explains why the climate–security nexus is relevant for the security sector and for [security sector governance and reform](#) (SSG/R), and vice versa. Section 2 draws on existing policy and scientific literature to outline the main linkages between climate and security, suggesting four pathways of interaction in which climate change poses security risks and creates instability for States and communities, both directly and indirectly. Section 3 frames the relationships between the security sector and the climate–security nexus and highlights the roles currently played by security sector actors in relation to climate change. The brief concludes by summarizing why viewing the climate–security nexus through an SSG/R lens offers a middle-ground approach that addresses climate security risks within a democratic framework of security governance.

1. Linking climate change and security sector governance

This brief argues that, along with growing political, policy, and scientific awareness of the links between the climate and security, and the intensification of climate-related security strains on states and communities, we can expect mounting pressure on

national security sectors and also on multilateral security institutions to adopt climate-related security considerations as part of their remit and to promote policies that tackle the security risks of climate change. To date, the debate within the security community has mainly been confined to military organizations, which envisage an extensive role for military actors in dealing with the security risks posed by climate change. At the opposite end of the debate, mainly articulated within the academic community, there are warnings against the risks of securitization and even militarization of climate change, which could be counter-productive and in the long run could undermine democratic governance ([Clingendael 2020](#); Floyd 2010, McDonald 2013).

This brief suggests that, while needing to be aware of such dangers, it is nevertheless important for policymakers to find a middle ground that will enable national security sectors and multilateral security organizations to play a positive role in the prevention, mitigation, and resolution of future climate and environmental security crises, as well as in the global process of climate adaptation. Attention needs to be paid to the intricate connections between the security sector and climate change, as empirical evidence also shows that all over the world security sectors are often part of the problem themselves, contributing to or aggravating climate-related security crises through poor governance practices and sometimes also through direct or indirect involvement in illicit activities that are harmful to the climate and the environment. Moreover, the security sector contributes directly to global warming, with military forces being among the [largest emitters of greenhouse gases \(GHGs\)](#) and consumer of fossil fuels in the world ([Crawford 2019](#)). At the same time, research into climate–security linkages shows that while climate change is a multiplier of security risks, it is not the sole cause and does not necessarily lead to violent conflict or other security problems, which rather are the result of clusters of factors specific to local circumstances and preconditions. In particular, the quality of governance has been found to have the greatest impact on the chances of tensions developing into violent conflicts or severe security crises. This research finding and policy lesson should also be considered in relation to security risks associated with climate change.

Against this background, this brief argues that SSG/R as a policy and normative approach has the potential to provide the middle ground that is needed, as it places particular emphasis on “good governance” practices in the security sector based on accountability and democratic oversight, and principles of transparency, respect for human rights



norms, participation, and inclusiveness. The merits of “good governance” of the security sector in helping to achieve human security goals as well as international peace and state stability through democratic consolidation have also been acknowledged by international and regional organizations, while an increasing number of states worldwide have embarked upon the reform of their security sectors (SSR). As SSR is tailored to local contexts and involves ownership by local actors, it potentially provides a useful policy framework for addressing the security challenges of climate change in states in transition, as many of these are highly vulnerable to climate impacts. Furthermore, as democratic states are also likely to be increasingly affected by the adverse effects of climate change, SSG/R can provide them with a framework for the reform of security sectors that are already democratically governed to adapt to climate change and the review of security strategies and policies to integrate climate change-related security risks.

2. Causal pathways of the climate–security nexus

The security impacts of climate change are multi-layered, generating both direct and indirect security risks. Such risks are unpredictable and spill over into other policy areas, such as the economy, health, and agriculture; these interlinkages were acknowledged by the Climate Action Summit, a global event that was held online on 25–26 Jan. 2021. Drawing on existing policy and scientific sources ([Adger et al. 2014](#), [Nett & Rüttinger 2016](#), [Mobjörk et al. 2020](#)), this section outlines four pathways within the climate–security nexus where the security sector is already carrying out both traditional and emerging mandates and roles in the field of climate security risk.

Pathway 1: Climate-related natural hazards leading to two distinct categories of security implications

1) The most direct security-related manifestations of climate change occur with **sudden and extreme weather events**, such as storms, droughts, or floods, that result in **disaster and humanitarian crises**. This is the best-known type of climate–security effect and has traditionally required the involvement of the security sector, especially the military, civil protection forces, and other emergency providers. As the magnitude and frequency of climate- and weather-related hazards continue to increase across the world, responses will demand more capacity, more funding, and better planning within the security sector for disaster risk reduction (DRR) activities and for the

provision of security in areas affected by climate-related hazards. As climate-generated natural disasters are not unique to any specific region, this is an issue that is likely to affect many countries and regions of the world.

2) A second category is **slow-onset natural hazards** which have unfolded progressively, often over several decades, **causing environmental degradation** such as air pollution, rising sea levels, land degradation and/or destruction of agricultural, forest/jungle, and residential areas, depletion of water reserves (rivers, lake basins), acidification of oceans, destruction of biodiversity, and so on. Over time, these phenomena create long-term imbalances in physical and social systems, leading to the **emergence of permanent scarcity regimes** (of water, food, land, etc.), the destruction of infrastructure (transport, communications, energy, military, etc.) and of livelihood systems (with harm being especially severe in areas already affected by poverty and inequality), and the emergence of epidemics and pandemics. These challenges are expected to increase dramatically as long as climate action fails to reduce GHG emissions. Security challenges in this second category are long-lasting and complex, as in many cases processes of environmental erosion cannot be reversed; instead, they require mitigation and adaptation strategies. Even where such trends can be stopped or reversed, it will take decades to see positive results, even if global warming is halted. By causing resource scarcity and environmental degradation, this second category of hazard also creates protracted humanitarian crises that aggravate social, economic, and political tensions and complicate the task of security sector actors. At the same time, they slow down and sometimes jeopardize the attainment of the Sustainable Development Goals (SDGs) and trigger new forms of discrimination against vulnerable groups, such as elderly people, youth, and women, undermining the provision of human security. Finally, rising sea levels present an existential threat to communities and states located on coastlines and to island states, which face losing parts of their territory, productive land, and ecosystems. For small island states, rising sea levels are an existential threat to their physical survival as sovereign states as well as to their populations, who risk becoming stateless “climate refugees”.

Pathway 2: Climate-related natural hazards and resource scarcity leading to internal displacement and cross-border migration

In the context of sudden climate-related natural hazards, populations have to be evacuated from



affected areas, sometimes permanently. This may require significant logistical resources and may involve the security sector. Shortages of vital resources and the destruction of livelihoods and infrastructure, especially in rural areas, compel people to migrate to urban areas or to cross borders in search of employment and new life chances ([IOM 2008](#), [Ager 2014](#): 761-771). Massive internal and cross-border movements of people may overwhelm states' capacity to manage them, both centrally and at the local level, and may create new pressures on the security sector. Likewise, massive and sudden influxes of people into already pressured urban areas complicates security provision. As already mentioned, climate-induced natural disasters or the loss of land due to rising sea levels (or to desertification) can create new categories of "climate refugees", people not necessarily fleeing war zones, political repression, or discrimination but rather uninhabitable territories that threaten their physical integrity, and the numbers of such refugees are only likely to grow in the near future. National and international systems of refugee protection need to take into account this new form of migration; meanwhile, security sector actors such as border guards, police, and justice systems (deciding on asylum rights, for instance) are already at the centre of **climate-related migration management** (Wolff 2021) and will be to an even greater degree in the future. Security sector actors will face challenges in providing for the security of their own states and populations as well as ensuring the security of non-citizens and respecting their internationally recognized human rights.

Pathway 3: Climate-related natural hazards and resource scarcity amplifying conflict dynamics

Climatic conditions can trigger new or aggravate existing conflicts by exacerbating resource scarcity (food, water, agriculture/fisheries, etc.) and environmental erosion (Carlson & Schmidt 2020). This, in turn, has indirect security repercussions at state and international levels.

1) Such impacts undermine **state resilience and the legitimacy of governments**, potentially leading to violence, mass unrest, armed conflict and, ultimately, to state failure. Conflicts over natural resources create conditions for fighting not only between security forces, pro-government militias, and armed opposition factions but also between different occupational groups, such as farmers, pastoralists, fishers, and hunters. Intercommunal, ethnic, and religious tensions, as well as conflicts involving internally displaced persons (IDPs), can be

heightened and may erupt in violence or generate protracted humanitarian crises. There are clear impacts on gender, as men and women are affected differently by such conflicts, with men being the main victims of killings by armed groups and women falling victim to sexual abuse and also seeing their traditional roles shift to being the main family provider. Another related issue is processes of disarmament, demobilization, reintegration, and resettlement (DDRR), which may be complicated by adverse climatic conditions that threaten the restoration of peace and livelihoods. States that are fragile due to political crises, economic recession, or severe social inequalities are highly vulnerable to such indirect effects of climate change, and this trend will most likely intensify in the near future ([IPCC](#)).

2) Such impacts create conditions that lead to **competition between states and potentially to confrontation** over access to or control over natural resources, which can lead to inter-state (armed) conflict or can stall negotiations of bilateral or multilateral arrangements over the collective use of such resources (Tir & Stinnett 2012). Climate-induced geopolitical conflicts of this kind are expected to increasingly challenge national and multilateral security institutions and even to jeopardize the sustainability of global and regional peace and security agreements. However, the collective use of natural resources can also provide an opportunity for trans-boundary cooperation and peacebuilding.

Pathway 4: Resource scarcity leading to criminality, terrorism, and radicalization

Case studies – especially but not exclusively from the Middle East and North Africa (MENA) region and sub-Saharan Africa – show a worrying trend towards the weaponization of vital resources (in particular water) by dubious non-state actors (Jayamaha et al. 2018), creating new terrorist and criminal threats. Resource scarcity has also been shown to be a significant factor in the recruitment by terrorist networks and radical movements of young men without employment prospects and of IDPs or migrants, for whom adverse climate conditions substantially increase the precarity of employment and livelihoods. Climate conditions can also create new opportunities for criminality, sometimes across borders – for instance, due to demand for scarce resources on the black market. Resource scarcity caused by climate change also creates fertile ground for political and religious radicalization, fuelling the rise of extremist movements and endangering statehood and democracy. Security trends of this nature, brought about by climate change, are likely to complicate the



provision, management, and oversight of security in both the short and the long term.

3. The security sector – driver of and driven by climate change

This brief suggests two ways of conceptualizing the relationship between the security sector and the challenges created by the climate crisis.

1) On the one hand, the security sector is an **intervening variable** in the climate–security nexus. This means that a poorly governed security sector within the context of deficient or fragile state governance will increase the likelihood of the disruptive potential of climate change leading to security crises or amplifying existing ones at all levels. Conversely, SSR and good governance of the security sector will most likely enhance the resilience of states and communities to peacefully and fairly address climate-related security challenges by adequately attending to human security needs, in particular in relation to vulnerable groups such as women, who are disproportionately affected by climate change, or youth, whose future prospects are diminished by it. Empirical research still has to uncover in a systematic way which impact security sector actors around the globe has in terms of both positive and negative roles in relation to the climate–security nexus as evidence is rather scarce and partial ([Brock et al. 2020](#), [van Schaik et al 2020](#)).

As a major emitter of GHGs, the security sector itself contributes to climate change. Moreover, environmental crimes such as the illicit and illegal extraction, exploitation, and smuggling of natural resources such as timber, minerals, or wildlife, and the illegal transport and disposal of toxic waste or pollutants, have been identified as a major challenge to state and global security, being ranked third among the most widespread types of crime globally by Transparency International (Nellmann et al. 2016). Not only are security and justice systems failing to prevent environmental crimes, but more often than not state and non-state security actors themselves are involved in such acts or protect those committing them. However, there are also positive trends towards new forms of “green militarization” (Masse & Lunstrum 2016) that are creating roles for the military in conservation practices. For instance, in Mali the UN peacekeeping operation (MINUSMA) is part of a multi-agency unit involving the Ministries of Defence and Environment, the Malian Army, and conservation NGOs that aims to curb elephant poaching. There are similar initiatives involving “carbon” forestry in Nigeria and rhino conservation in Kaziranga National

Park in India (Duffy 2017). While national and international armed forces contribute to peacebuilding as well as to humanitarian and disaster relief missions, they also put pressure on the environment and aggravate climate warming through such activities. In response, for instance, in 2012 the UN Environment Programme (UNEP) issued policy recommendations to improve the environmental protection aspect of peacekeeping operations and to use the peacebuilding potential of natural resources to prevent relapses into conflict and instability (Scott & Khan 2016; [Abdenur2020](#)). Another critical area is military spending, which diverts state financial resources from funding reforms that would support the much-needed structural shift away from a carbon-based economy towards sustainable development. Such reforms are more likely to address the issue of climate warming, improve good governance, and reduce inequality, thereby reducing the likelihood of climate security risks.

Police forces also have mixed impacts on the mitigation of climate security risks. As social unrest and even violent conflict due to climate-induced resource scarcity worsen in many countries, there will be greater demand for intervention by police forces to restore order, which increases the potential space for repressive practices. From an SSG/R perspective, the climate–security nexus highlights the necessity of improving relationships between police and the communities in which they operate by building trust through communication and cooperation with non-state security actors, local communities, and religious leaders and civil society organizations. In this sense, police forces may also have a preventive function by helping to de-escalate tensions at an early stage and acting as an early warning mechanism for public decision-making. There are examples highlighting the positive role that police forces can play, such as the establishment of a Serious and Organized Crime Team within the United Nations Police (UNPOL), which provides expertise on environmental crimes, human trafficking, sexual and gender-based violence, crime analysis, and police forensics in the context of climate security risks ([Carrilho 2019](#)).

In terms of oversight, formal and informal oversight actors can play a tremendously positive role in relation to the climate–security nexus. Parliaments, especially committees and staff specializing in security, both internal and external, need to sharpen their expertise in and receptivity to the challenges involved. Consideration of these challenges needs to be included in all parliamentary tools and mechanisms of democratic control over the security sector, and also in regard to formulating national security policies that



take into account the impact of climate change on national security and the mandates and functioning of the security sector. Climate-related natural hazards may lead to states of emergency in which security actors are entrusted with sweeping powers, while at the same time the freedoms and human rights of citizens are curbed. In extraordinary situations of this kind, robust parliamentary oversight of the security sector is paramount. Equally, civil society actors can play a big part in raising awareness of sensitive issues such as climate justice and inclusiveness, the uneasy intricacies of climate security, and human rights, including those of indigenous peoples. Media organizations need to develop expertise on the connections between climate security and the involvement of security actors and provide extensive coverage of such issues. Investigative journalism can play an extremely important role in uncovering inappropriate or criminal behaviour by security actors.

2) On the other hand, the security sector is also a **dependent variable**, as national security sectors are themselves impacted by the climate–security nexus. As a matter of course, the climate-related security pathways described in section 2 may lead to shifts in the roles, mandates, operations, strategy, and logistics of security sector actors. National security strategies and policies and oversight practices, as well as logistics, infrastructure, and equipment, may require adaptation in security environments that are changing due to climate conditions and more extreme and unpredictable weather patterns ([U.S. DoD 2019](#)). For instance, climate change poses risks to military effectiveness in terms of readiness, operations, and strategy ([Climate Security 101](#): 3-4). Rising sea levels may compromise coastal military installations, while droughts or floods can put pressure on critical military infrastructure, hampering the ability of the military to carry out operations in a timely manner. Combat and humanitarian missions by the military are also impacted when climate conditions affect supply chains and logistics capacity, directly threatening operations and personnel. As described under the fourth pathway, vital resources such as water can be weaponized during conflict by non-state armed actors against armed forces and civilian populations ([Femia 2018](#), van Reedt Dortland et al. 2019). Melting ice may influence submarine operations and extreme heat can affect military training. More frequent and more intense weather events can overwhelm the capacity of armed forces to deliver disaster relief and humanitarian assistance. At the strategic level, competition over scarce resources (described under the third pathway) creates new tensions between states, increasing the

likelihood of conflict, which directly impacts military strategy (e.g. tensions between Russia and other Arctic nations over the melting ice cap; conflicts over water in MENA; and tensions in the South China Sea that may be complicated by the impact of climate change). In response to such threats, many states (e.g. European countries including at EU level, Australia, New Zealand, Jordan, and the US) have integrated impacts of climate change on the military into their security strategies and planning (McDonald 2020). New policy trends (e.g. in Morocco, Spain, and France) indicate that the military is likely to become more strongly involved in activities beyond combat, mainly in humanitarian response to natural disasters and climate change adaptation. Military information and intelligence, surveillance, and reconnaissance (ISR) capabilities will be increasingly used for such civilian purposes.

Natural hazards also affect other security sector actors, such as police, civil protection, justice, and oversight systems; this was seen, for instance, in the aftermath of Hurricane Katrina in 2005 in the US, when the entire system of law enforcement broke down (Wigginton 2007). Climate-generated emergency situations may lead to encroachments upon democratic systems that are even more severe and long-lasting than those caused by the current COVID-19 crisis, while formal and informal oversight institutions may be incapacitated in their work. Therefore, parliaments (and wider political systems), civil societies, and expert communities must consider conducting risk and vulnerability assessments, not only with regard to more tangible impacts of climate change on physical, human, and economic security but also in terms of institutional security (i.e. threats to the capacity of institutions to work as planned and to fulfil their mandates). Here, the focus should be particularly on the resilience of oversight institutions and on mechanisms to develop contingency plans for emergency situations that would enable them to continue performing their oversight role.

Conclusion

This brief discusses the climate change and security nexus and argues that climate-related security challenges are closely linked to the security sector. Preliminary evidence shows that the provision, management, and oversight of security are already being strained by climate change impacts and is likely to become more strained in the near future. As a middle ground, between the security sector playing no role in response to climate change compared with climate change becoming securitized or even militarized, SSG/R has the potential to support the



security sector and policymakers at national and international levels to navigate current and future climate security challenges, in two ways. Firstly, SSG/R enhances **effective security provision** in the context of climate change by putting in place frameworks which assist security sector actors to use their expertise, capabilities, and resources to help tackle and prevent climate security risks. SSG/R also promotes gender-sensitive and participatory approaches through the security sector collaborating with communities and civilian authorities to jointly enact climate and mitigation initiatives. Similarly, it advocates for the security sector to proactively reduce its environmental footprint and GHG emissions from its activities. Secondly, SSG/R enhances **accountable security provision** in the context of climate change by strengthening the role of oversight institutions in relation to climate security risks, ensuring that robust democratic control prevents any potential mission creep, extortion, violence against communities, or other abuses by

security providers. By upholding human rights standards, an SSG/R approach can prevent violence against climate activists and land defenders by both security providers and other actors. SSR can provide states in transition with the necessary tools to simultaneously consolidate democratic governance and build resilience against climate security risks.

This policy brief is part of an ongoing research project by the Policy and Research Division of DCAF – Center for Security Sector Governance which investigates the impact of climate change on governance and reform of the security sector. Its content also reflects the conclusions of the UNOG-DCAF Seminar “The Impact of Climate Change on Local and Global Security Governance: Learning from Local Experiences of the Security Sector”, which was jointly hosted by the UN Office in Geneva and DCAF on 10 December 2020.



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Dr Maria-Gabriela Manea is a Programme Manager in DCAF's Policy and Research Department, where she leads two projects – "Climate Change and Security Sector Governance/Reform (SSG/R)" and "Knowledge Products on SSG/R". Prior to joining DCAF in January 2020, she was a lecturer and research fellow in international relations at the University of Freiburg (Germany), where she obtained a PhD in political science. She has published articles in peer-reviewed journals, such as Cooperation and Conflict, The Pacific Review, ASIEN, and Contemporary Politics and has contributed chapters to collaborative volumes (published by Routledge and Palgrave Macmillan). She was co-editor of the book The Politics of Military Reform: Experiences from Indonesia and Nigeria (Springer Verlag, 2012, with J. Rüland and H. Born), which conducted a comparative investigation of military reform in Indonesia and Nigeria. Her research has also focused on regional and interregional human rights norms diffusion and localization, EU–Southeast Asia/ASEAN interregional relations, and regionalism in Asia-Pacific.

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