SCIENCE FOR POLICY BRIEF

Climate change as a driver of armed conflict

Evidence, pathways, and knowledge gaps

2026

HIGHLIGHTS

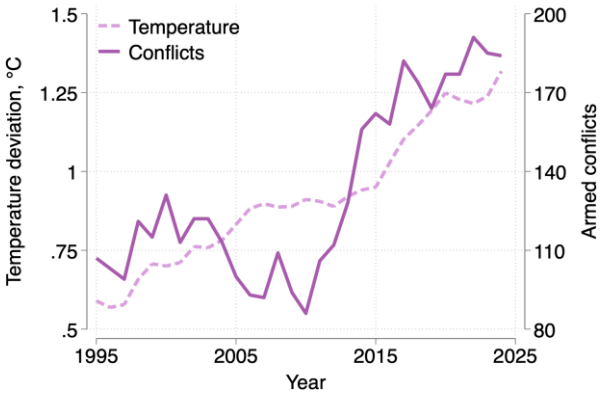
- Climate change can increase armed conflict risk, but primarily in contexts marked by high vulnerability to climate extremes and high underlying conflict risk.
- Key drivers of vulnerability include economic marginalization, climate-sensitive livelihoods (e.g., rainfed agriculture, pastoralism), fragile or exclusionary governance, and a history of violent conflict.
- Accelerating impacts of climate change may make climate a more relevant conflict driver in the future, but deep uncertainties exist regarding how societies will adapt and respond to climate change.
- Efforts to reduce near-term climate-driven conflict risk should address drivers of vulnerability through, e.g., equitable resource management, affordable insurance schemes, and inclusive governance.
- Climate change mitigation is the only sustainable strategy to minimise risk in the longer term.

Trends

The world is heating up. The last ten years have been the ten warmest years on record, with the global average over the past five years reflecting 1.3°C of global warming (Figure 1). Indeed, in 2024 global mean temperature for the first time exceeded 1.5°C above the 1850–1900 pre-industrial average (1).

The global frequency of armed conflicts also has risen in recent years, especially in vulnerable parts of Africa and the Middle East (2). Year 2024 saw a total of 61 civil and interstate conflicts – the highest number ever recorded – and the frequency of other conflict types also is on the rise. The number conflict-related casualties is the highest in four decades.

Figure 1 – Trends in climate and armed conflict



Source: Temperature data from Copernicus ERA5 (1), expressed as 5-year moving average deviation from the 1850–1900 global mean temperature; a map with spatial trends is available here. Conflict data from Uppsala Conflict Data Program (2), which include yearly counts of stateb-ased, non-state, and one-sided conflict (see Terminology box for definitions). A map with detailed location of conflict events is available here.

Terminology

Climate change refers to long-term changes in average weather conditions and related physical processes (3).

Climate variability refers to short-term deviations from average climatic conditions, as well as the occurrence of extreme events.

Climate is used here as shorthand for all climate-related hazards, from extreme events to gradual warming and sea-level rise.

Conflict is shorthand for organised, political violence that results in at least 25 battle-related deaths per year (2). It is common to separate between three forms of conflict:

State-based conflict is violence between state actors (interstate conflict) or between state- and non-state actors (civil conflict);

Non-state conflict is violence between non-state actors (intergroup and intercommunal violence);

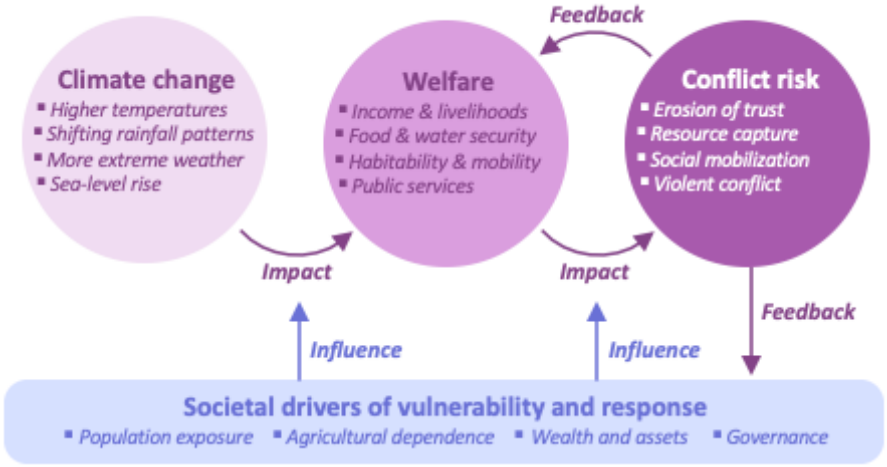
One-sided violence refers to violence by state- or non-state actors against unarmed civilians.

Connecting climate with conflict

Despite the parallel upward trends of global warming and prevalence of armed conflict in recent years, there is broad scientific agreement that climate shocks, on their own, have limited influence on conflict risk in current societies (4–7). Rather, the extent to which and how climate affects conflict depend critically on characteristics of affected societies (*high confidence*).

This understanding of climate-conflict links as *indirect* and *context-dependent* means (i) that a climate event (e.g., a drought or a flood or gradual drying) may have widely different implications for exposed societies at different levels of vulnerability, and (ii) that a climate effect on conflict risk emerges via intermediate impacts. Violent conflict, in turn, often has devastating impacts on the ability to cope with climate change (*high confidence*) (8,9). In fragile contexts, these processes reinforce each other, threatening to lock societies in vicious circles of violence, vulnerability, and adverse climate impacts (10) (Figure 2).

Figure 2 – Pathways from climate to conflict



Source: Adapted from (11).The figure visualises some plausible indirect links from climate change to conflict via adverse welfare impacts. Degree of vulnerability to climate change and the management of immediate impacts are decisive in shaping resulting conflict risk. Feedback effects from conflict can further aggravate welfare and increase vulnerability to future climate impacts. Bullet points are illustrative and not meant to cover all relevant aspects of climate change, welfare, and conflict risk.

A note on confidence

High confidence generally means robust empirical evidence and high scientific agreement.

Medium confidence generally means medium evidence and medium agreement.

Low confidence means limited evidence and/or low agreement.

Judgments follow the IPCC guide on uncertainty (12).

State of evidence

More than 15 years of research into climate-conflict connections in the contemporary world have resulted in increasingly robust insights. Overall, research suggests that climate is a relevant contributor to conflict where impacts exceed local coping capacity.

There is more consistent evidence that such effects alter conflict dynamics (e.g., battle frequency, incidence of violence) than the likelihood of initial conflict outbreak (*medium confidence*). Likewise, climate is found to be more relevant for local, low-intensity conflicts, such as intercommunal violence, than for major civil and interstate wars (*medium confidence*).

Research has identified a number of societal characteristics that increase susceptibility to climate-related security risks. At the country level, low socioeconomic development, high agricultural dependence, fragile or discriminatory governance, and a history of political violence are especially relevant (*medium confidence*). At the local level, ethnopolitical exclusion and climate-sensitive livelihoods increase the risk of violent mobilization in response to a climate shock (*medium confidence*). Climate impacts in contexts that share many of these vulnerability drivers are more likely to exceed local coping capacity, resulting in significant humanitarian challenges and increased risk of conflict.

At the same time, these contextual factors also have larger direct effects on conflicts observed until now than does climate variability (*high confidence*).

Plausible indirect pathways linking climate to conflict include income and livelihood loss, acute resource scarcity, and compromised food security (*medium confidence*). Although climate is a significant driver of human mobility (13,14), there is *limited evidence* that this, in turn, increases conflict risk, with exception for pastoral regions such as the Sahel. Farmer-herder and herder-herder conflicts are often fought over land and water resources and mobility is an inherent element in these dynamics (15).

Outbreak of conflict can dramatically reduce local capacity to cope with climate shocks, due to loss of capital, erosion of trust and cooperation, barriers to mobility, etc. Marginalisation of women in conflict zones means that there often is a clear gender dimension to the victims of climate-conflict nexus (16).

Drought and civil war in Syria

The Syrian civil war (2011–24) is the most high-profile conflict that has been linked to climate change (17–21). In the years leading up to the war, the region experienced the worst drought on record, compounding long-term trends of drying and depletion of groundwater. The result was a collapse of the Syrian agricultural economy that led farming communities to move to the cities in large numbers, adding to preexisting socioeconomic pressures. In March 2011, protests broke out across the country, prompting a brutal military response.

Was climate change a major driver of the Syrian uprising? Despite the intuitive appeal of this narrative, there is little evidence that drought and displacement were important factors in the social mobilisation. Instead, the protests centered around political issues as part of a larger ideological awakening in the region. What makes the Syrian case stand out from its neighbors is not exposure to extreme climatic conditions but the ruthless state response and subsequent militarisation of non-state actors that transformed a peaceful pro-democracy uprising into a destructive civil war. See (20) for a detailed analysis of the case.

Looking to the future

Empirical research to date has focused mostly on how climate variability has affected civil and non-state conflicts in recent decades. Projections of conflict into the long-term future suggest higher conflict risk with higher levels of warming and with slower economic development and higher population growth (*medium confidence*). This means that climate change will pose larger challenges to peace and security for future generations than it has until now.

There is a concern that intensifying climate change also may increase the risk of interstate conflict in the future, for example over management of trans-boundary rivers in water-scarce regions or resource competition in the Arctic (*low confidence*).

Climate change is increasingly exposing societies to unprecedented environmental conditions and events, challenging effective adaptation and pushing societies toward hard adaptation limits (22). Poorly understood non-linear changes, cascading dynamics, and potential tipping elements in both the climate system and societal response (23) mean that

insights from past research may lose analytical value in a warmer world (*low confidence*). More systematic research is needed on how climate impact cascades influence peace and security across regions (24).

How societies respond to climate change in terms of adaptation and mitigation action also can directly affect peace and security, both positively (by building resilience and rapidly curbing the rate of global warming) and negatively (for example by amplifying extant inequalities in society) (25). However, these potential risks remain poorly understood.

Insights for policy

The scientific evidence base outlined here can support a broad range of actions to improve understanding of, and mitigate, climate-conflict links.

- Addressing drivers of vulnerability is key to limit climate-driven security risks, cf. the Commission's 2023 *Joint Communication* on the climate and security nexus (26). This includes improving economic resilience to climate extremes and investing in disaster risk reduction and climate adaptation, which can strengthen cooperation and the prospect of sustaining peace under stress (27). The Commission's report on insurance as climate adaptation (28) also is relevant in this regards. Strengthening natural resource management (29) and inclusive governance (30) are other key entrypoints for peacebuilding in vulnerable contexts.

- Armed conflict severely harms the capacity to cope with future climate shocks, creating self-reinforcing cycles. Breaking these cycles requires also addressing drivers of conflict, such as political discrimination, economic marginalisation, and unclear or unfair resource management and land tenure, including their gendered dimension (31).

- Poorly designed or implemented climate adaptation and mitigation policies may also increase conflict risk, for example in relation to resource extraction and land use changes. More robust knowledge on these challenges is needed (32,33).

- Further investments in early warning tools (34,35) to monitor and forecast acute climate and security hotspots in regions of particular concern (e.g., the Sahel) can facilitate improved crisis detection and response. Relevant efforts include the Joint Research Centre's *Global Conflict Risk Index* (GCRI) and the FAO's *Financing Shock-Driven Food Crisis* (FSFC) mechanism.

- There are still few scientific studies on long-term (i.e., mid- to end-of-century) security risks in response to climate and societal change. The proposed *Climate and Environment Security Data and Analysis Hub* (26) may contribute to mapping regions projected to face hard adaptation limits with associated timelines to inform future planning.

- The European Green Deal's mitigation targets and transition partnerships should be recognised as fundamental to limit long-term climate security risks. As temperatures continue to rise, societies will increasingly be approaching hard limits to adaptation, potentially triggering poorly understood "tail risks" (i.e. low probability-high impact events), from a collapse of the AMOC current that might threaten European food security and financial stability (36) to interstate conflict over unilateral Solar Radiation Modification experiments (37).

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