

MAKING PEACE WITH CLIMATE ADAPTATION

AUTHORS

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Executive Summary

Climate change poses risks to poor and rich communities alike, although impacts on the availability and distribution of essential resources such as water, food, energy and land will differ. These changes, combined with other social, political and economic stresses and shocks, can increase tensions within and between states, which, if unmanaged, can lead to violence. Climate-related changes to transboundary waters, food security and trade patterns, sea levels, and Arctic ice, as well as the transition to a low-carbon economy, have profound geopolitical implications. Largescale climate-related migration may also affect the stability of states, and relations between states. Climate action itself may prove destabilizing: (mal)adaptation can disrupt economic and social relations, particularly if implemented without appropriate political economy analysis and risk assessments.

In response to analyses linking climate change to security, peace and security actors increasingly realize that interventions to promote peace and stability are more likely to be effective if they incorporate such analyses. At the United Nations, member states have agreed to shift towards a “preventive” approach to conflict risks, grounded in sustainable development. The UN leadership is adjusting institutional structures to better understand and respond to climate-related security risks at all levels, including a newly established climate security mechanism in New York. Many regional intergovernmental institutions have also recognized the links between climate change, peace and security. Some, such as the Intergovernmental Authority on Development in East Africa and the European Union, have incorporated climate-related factors into their conflict early-warning mechanisms.

We are only just beginning to understand the realities of adapting to unprecedented climate change, however. Climate-related factors will need to be incorporated systematically into political analysis, risk assessment, and early warning, accompanied by deeper integration of climate-security risk assessment into planning and political engagement in the field. Similarly, more consistent analysis of climate-related security risks must contribute to politically informed, conflict-sensitive adaptation strategies.

About this paper

This paper is part of a series of background papers commissioned by the Global Commission on Adaptation to inform its 2019 flagship report. This paper reflects the views of the authors, and not necessarily those of the Global Commission on Adaptation.

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Capacity and political interest in integrating climate risks into national security strategy, decision-making and programming is vastly insufficient. Although policy development to better manage climate-related risks, shocks and slow-onset events has begun in some contexts, this has scarcely been translated to the operational level. Both mitigation and adaptation actions are rarely informed by the full range of risks to national interests posed by climate change. In some states, skepticism about the threats posed by climate change also impedes action.

To address the destabilizing consequences of climate change, adaptation activities need to be considered beyond sectoral or project level. Given the scale and scope of climate change impacts, **adaptation is perhaps better understood as a process of social, political and economic change within which people will use resources differently, and in some cases move to different locations or livelihoods.** A safe climate transition will require governments to adopt an adaptation “vision” that incorporates and strives to address the needs of different interest groups which will be affected by the transition process. This is all the more important in tense and fragile contexts, where conflict risk is highest.

Wherever applicable, adaptation to climate change must be informed by conflict prevention and peacebuilding efforts. This will also mean that the positive impact of adaptation finance can achieve multiple outcomes to support sustainable development, human rights, peace and security. The following recommendations could be considered in order to diminish the risks posed by climate change:

- **Create or update systems for multidimensional early warning to support early response to emerging climate risks.** Such systems must be capable of tracking environmental changes in a geospatial context, and mapping them against livelihood dependencies as well as social, political and security factors on multiple timelines. Findings should be integrated into peace and security analysis and decision-making. To fulfil this recommendation, more investment by governments and multilateral institutions will be required.

- **Facilitate risk-tolerant financing** for adaptation initiatives in insecure locations. Flexibility is required to adjust approaches to political contexts, and permit implementers to explore opportunities for environmental peacebuilding.
- **Develop nexus financing instruments** to implement adaptation projects that arrive at multiple, mutual development and security outcomes. Although calls for such integrative approaches are not new, adaptation projects funded by development aid often shy away from integrating security objectives or favoring mediation and diplomatic approaches. Similarly, conflict prevention, peacekeeping and stabilization funds are not incentivized to support investments with adaptation co-benefits.
- **Borrow from the peace and security toolbox to support adaptation activities that include mediation, (public) diplomacy and outreach** to prevent compounding negative power dynamics and inequalities, which could heighten conflict risk. Adaptation activities are often framed and implemented in a technical way, whereas the support of local populations, and awareness of tensions between social and political groups, are of utmost importance for successful implementation, particularly in insecure or volatile locations.
- **Realign multilateral and government policy to facilitate timely, political economy-informed and strategically focused adaptation efforts, by:**
 - **Taking the long view with urgency,** in recognition that adaptation solutions that are most effective in building resilience and addressing climate-related security risks may take time to implement, particularly in fragile and conflict-affected states;
 - **Enabling politically informed approaches** to help adaptation planners understand different and competing perspectives and interests, anticipate resistance from affected stakeholders, and build consensus for change;

- **Targeting support to states and societies where climate change impacts have potential major domestic or international security consequences.** Given the political nature and timescale for designing and implementing effective adaptation strategies, countries, donors and multilateral institutions should award immediate and priority attention to boosting adaptation work in states and regions facing **medium-term high-impact risks**.
- **Systematically draw on private sector and civil society analysis of climate risks and vulnerabilities** for adaptation, thus helping to build broad societal consensus for interventions as well as highlighting risks to governments. Supporting the involvement of independent actors is particularly relevant for exposing vested interests and creating the political space for breaking with the status quo.
- **Integrate multidimensional analysis that incorporates non-traditional security risks into standard security analysis processes,** recognizing the destabilizing influence of climate change on the international order as well as on prioritization, decision-making, and peace-keeping and stabilization programming.

1. Report Objectives and Structure

This report aims to demonstrate why and how climate adaptation is increasingly relevant to the core of national and international peace and security agendas, in a context of changing global geopolitical relations. Early thinking on the role of adaptation in conflict prevention and peacebuilding provides insights into a range of risks and opportunities from climate impacts and adaptation. This paper argues that adaptation can play a substantial role in reducing conflict risk if a political economy-informed approach is taken. Insights from this study will feed into the 2019 Flagship Report by the Global Commission on Adaptation (GCA).

This report begins with a brief overview of the policy and academic debate on the link between climate and security.

It then continues with making the security case for adaptation, discussing inter- and intrastate climate-related security risks, as well as possible shocks and climate policy implementation risks. The broader geopolitical context and ethical dilemmas are then discussed. The next chapter indicates where progress towards addressing emerging climate-related security risks is being made – and what more needs to be done. The implications for climate adaptation practice are discussed, and the paper outlines three broad policy prescriptions for adaptation practice to address climate-related security risks: adaptation needs to be timely, politically informed and strategically targeted. The final chapter summarizes key messages and recommendations.

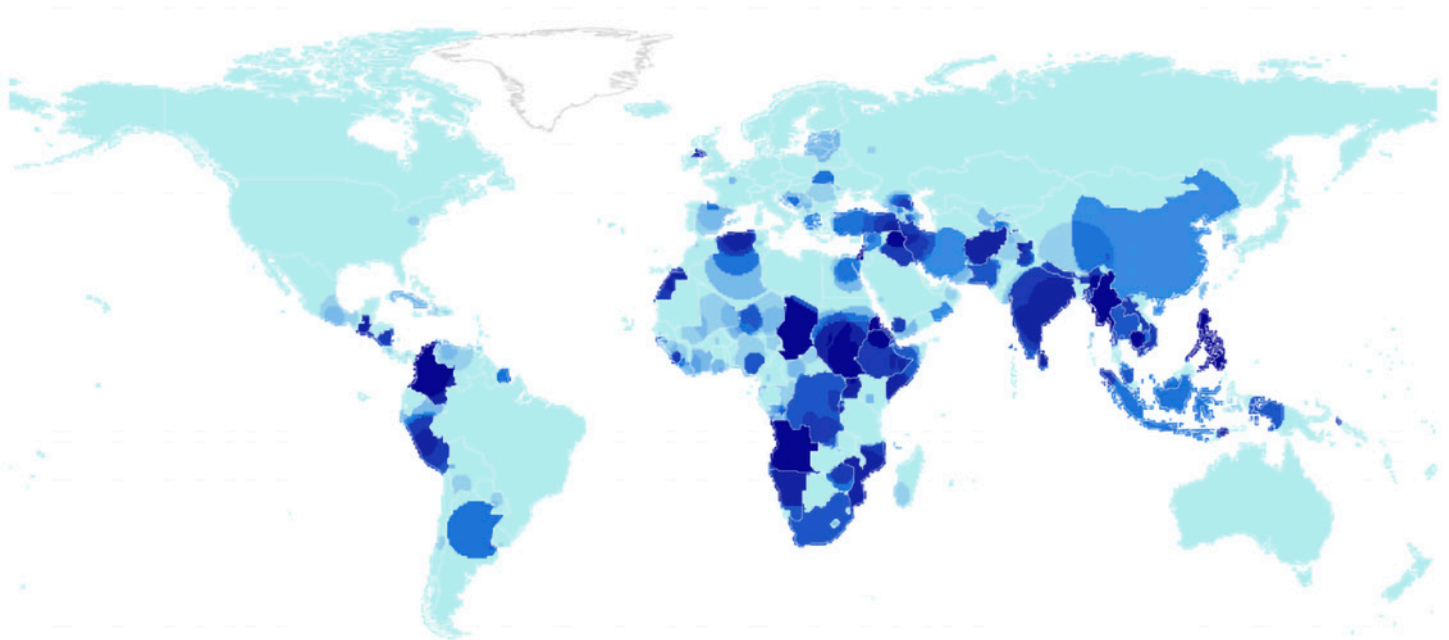
2. The Evolving Policy and Academic Debate on Climate Security

This chapter gives brief overview of the debate on the relationship between climate and security in policy circles and academia. It points to the shift from recognising climate as a threat multiplier to early action to address risks related to climate change, even in the absence of full academic consensus on the relationship between climate and conflict.

2.1. From recognition to policy mechanisms and early action

The UN Secretary-General, Antonio Guterres, describes climate change as an “existential threat” which is “moving faster than we are”. Despite international efforts to reduce greenhouse gas emissions, according to current projections we potentially face 2.7-3.7C of warming, far beyond the objective of the Paris Agreement of 2015 to keep temperature rise well below 2 degrees and preferably below 1.5 degrees.¹ Higher temperatures, changed precipitation patterns, and extreme weather events such as floods and storms are already transforming natural and human systems.

The UN and EU first acknowledged climate change as a “threat multiplier” in 2007. While it has taken some time

FIGURE 1Global areas of armed civil conflict since 1946.²

Note: Darker shades indicate more durable conflicts. Conflicts have erupted more often in regions where population growth and poverty are relatively high.

Source: Halvard Buhaug and Ida Rudolfson, "A Climate of Conflicts?", *Conflict Trends 05* (Oslo: PRIO 2015).

for states, non-governmental organizations, the private sector and multilateral actors to adjust their approach, climate change is increasingly considered as a systemic security risk, ranging from threats to human security, via national security to international security. There is also growing evidence that citizens around the world consider climate change as a threat to national security: in 2017, Pew polling found that 61 percent of people cited climate change as a threat to their country, comparable with 62 percent people citing the threat of ISIS.³

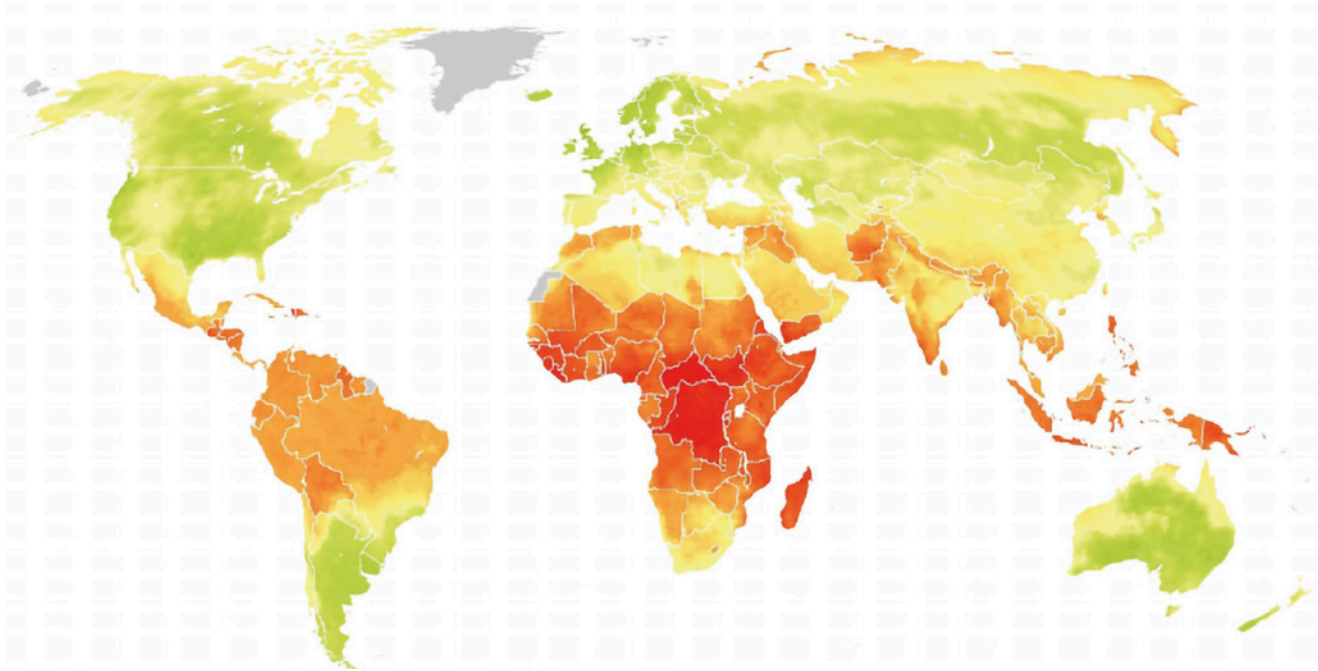
2.2. Looking into the crystal ball of climate-related conflict risk

Figures 1 and 2 show a clear relationship between armed conflict and climate vulnerability.⁴ This would imply that adaptation to reduce climate impacts will need to be undertaken in tandem with peacebuilding efforts.

While the maps suggest a link between conflict and climate variability and research suggests that weather

changes already played a crucial role in the fall of the Roman empire as well as in an increased frequency of conflict globally in the mid-17th century, the contemporary debate on if and how climate change and security risks are related has just started to pick up, and wide-ranging academic consensus is lacking.^{5,6,7} Links are indirect and difficult to quantify. However, some regions are widely perceived to be more vulnerable to climate-related security risks: namely, regions that are conflict prone, which lack good governance systems, and where there is significant livelihood dependence on climate-vulnerable natural resources, highly inequitable distribution of wealth and serious development challenges.⁸

Some security and conflict scholars argue that it is not possible to quantify climate-related security risks, either because they consider each conflict to be unique and therefore not predictable, or because they do not consider the relationship significant (see Boxes 1 and 3).⁹ Consensus is nonetheless emerging that some kind of climate-conflict relationship does exist.¹⁰



Note: Red indicates greater vulnerability.

Source: Maplecroft

Increasingly, it is understood by responsible (international) actors that in cases where climate change is considered “likely” to affect security, action to understand and respond to climate-related risks can no longer be postponed.

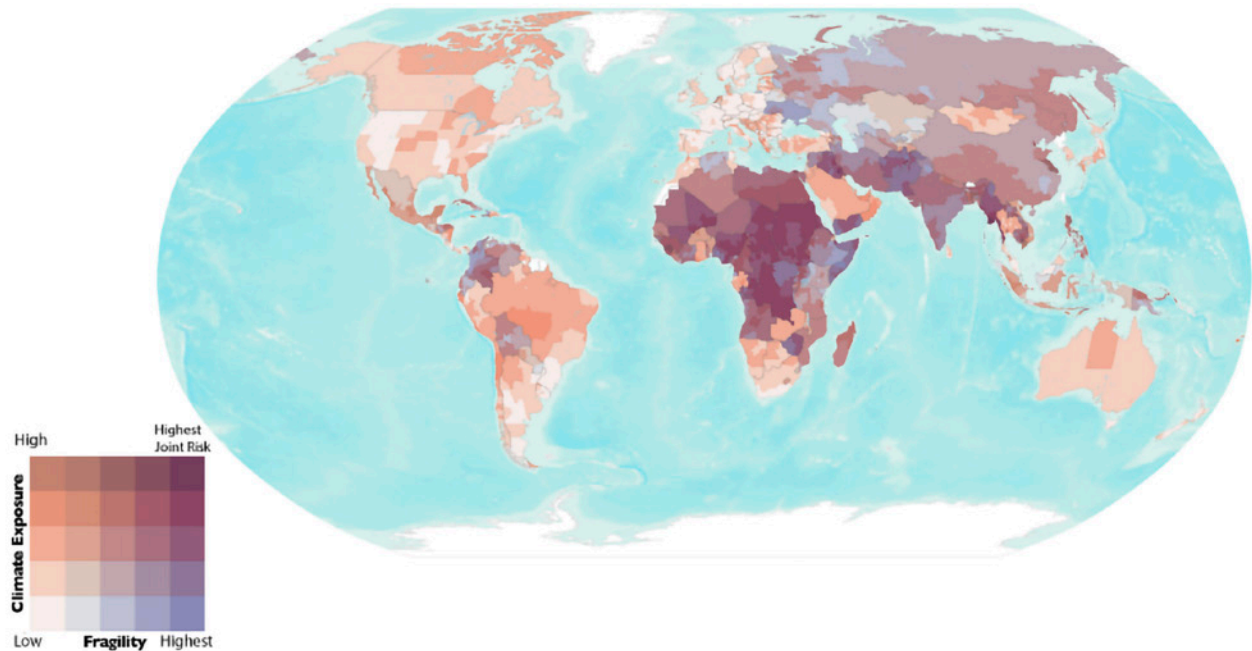
A 2018 report commissioned by USAID explores climate change as an interconnected risk, analyzing how and where state fragility and climate hazard risks intersect (Figure 3).¹² Consistent with this approach, adaptation can reduce exposure to climate hazards and also decrease fragility risks by increasing resilience, benefit sharing and technical cooperation. The report’s findings are largely in line with those of other major studies that connect climate change and/or water scarcity on the one hand, and fragility and/or conflict risk on the other.^{13,14,15,16} A landmark OECD DAC study published in 2018 also included an environmental dimension to its states of fragility framework.¹⁷

The USAID study urges a focus on investments in highly fragile states with large populations facing very high exposure, notably Colombia, Egypt, India, Iran, Iraq, Libya, Mauritania, Nigeria, and Pakistan. It also advocates

forestalling “the emergence of high compound fragility-climate risks in the future” by “shoring up the capacity of states that today have moderate fragility and very high climate risks” such as Bangladesh, China, Ecuador, the Philippines, Russia, and Venezuela.¹⁸ This would constitute a shift from current practice, where implementation of adaptation initiatives often prioritizes immediate needs, with limited focus on higher-impact medium-term risks. Given the political nature and timescale for implementing effective adaptation, such risks deserve more emphasis.

2.3. Financial flows still need to adapt

During the past decade, the international debate has shifted from acknowledging climate change as a risk factor to recognizing the need for action to reduce that risk. However, the commensurate financial resources are still lacking. In 2017, \$300 billion was spent on fossil fuel subsidies and \$1.7 trillion on global military spending, but only \$410 billion was spent on climate action.^{19,20,21} As climate impacts intensify, governments will need to demonstrate they are prioritizing and investing in adaptation to maintain citizens’ faith in the state’s ability to provide security.

FIGURE 3Global map by USAID (2018) combining climate exposure and fragility risks²²

Source: USAID

BOX 1

Academic dissonance: the limitations of quantitative data

The contemporary academic debate discussing the climate and conflict relationship ranges from a) precise calculations discussing the percentage increase in conflict risk due to decreased precipitation rates to b) claims from conflict analysts that exact calculations are not possible since each conflict is different and needs to be understood in its own historical context.^{23,24} With regard to quantitative approaches, it is important to understand that different studies use different proxies, timescales, definitions of conflict, geographical scales and models to understand perceived (indirect) climate and conflict links. This makes it difficult to compare results.

An exemplary discussion on representative data and causal links illustrates this dissonance in approaches. An influential study by Hsiang and Burke in 2014 found evidence that climatic events, both slow and rapid onset, influence numerous types of conflict at all scales – based on the examination of 50 quantitative empirical studies. However, the study's conclusion that there is strong support for causal relations between climatological changes and conflict has been questioned and criticized by a leading group of scientists for three reasons. Buhaug et al.^{25,26} argue that (i) there is a considerable overlap between the case studies used, (ii) the studies used are too heterogeneous to assume causal homogeneity, and (iii) the studies used are not sufficiently representative for the overall field of inquiry.

A related and more recent discussion questions case study selection in climate-conflict analysis.²⁷ Referred to as the "streetlight effect", the tendency of researchers to select cases and variables based on accessibility rather than objective relevance challenges the generalizability of research.²⁸ Central arguments often focus on English-speaking nations, discounting most countries with no British colonial history, as well as former or current conflict countries, thus overlooking examples of successful environmental conflict resolutions and peaceful adaptation processes.

TABLE 1

OECD Adaptation/Migration/Climate Related Development Finance Data 2017

Recipient	Adaptation-related development finance - Commitment - Current USD	Mitigation-related development finance - Commitment - Current USD	Overlap - Commitment - Current USD	Climate-related development finance - Current USD
Afghanistan	148,375,359	147,226,887	60,433,468	235,168,779
Angola	76,402,198	119,464	182	76,521,480
Burundi	33,817,39	125,448,066	1,380,033	157,885,431
Central African Rep.	7,807,203	1,103,596	1,103,596	7,807,203
Cameroon	184,497,776	65,468,595	35,824,589	214,141,781
Chad	12,705,355	4,413,243	1,404,577	15,714,022
DR Congo	84,478,461	73,124,400	57,668,881	99,933,980
Ethiopia	431,735,347	230,000,418	114,958,924	546,776,841
India	1,129,500,237	2,304,254,375	100,105,955	3,333,648,656
Mali	114,528,425	116,434,936	24,264,277	206,699,084
Mozambique	256,027,738	122,891,869	104,137,411	274,782,196
Myanmar	215,478,000	416,028,318	9,249,787	622,256,532
Niger	133,461,724	12,179,766	11,850,378	133,791,112
Pakistan	159,244,494	423,408,330	61,434,405	521,218,418
Rwanda	110,925,828	23,170,998	21,762,414	112,334,413
Somalia	302,739,159	965,528	570,984	303,133,703
South Sudan	89,794,891	365,483	63,666	90,096,708
Sudan	15,820,014	1,010,275	972,573	15,857,716
Uganda	92,042,100	69,713,100	54,930,283	106,824,918
Yemen	10,708,883	-	-	10,708,883

Note: Adjusted to countries with high climate-security risks.

The Intergovernmental Panel on Climate Change (IPCC) coverage of links between climate change and security reflects the complexity of academic discourse on this subject. After brief mentions in the Third Assessment Report in 2001 and the Fourth Assessment Report in 2007, the Fifth Assessment Report by Working Group II contains a considered assessment of the climate change-conflict nexus especially in the human security chapter.²⁹ However, the Fifth Assessment Report was criticized for the divergent findings on the climate-conflict nexus found across four different chapters.³⁰ The approach taken in a special IPCC report³¹ on risks related to extreme events and disasters has received broad support. Here, climate change is regarded as a risk multiplier for instability in the most volatile regions in the world.

In 2016, donors spent about \$23 billion on adaptation, which is about 15 percent of development aid and 10 percent of what would be necessary in 2050.³² Several donors have indicated they intend to spend more on adaptation. Effective adaptation is often considered difficult to finance in highly insecure countries. Nevertheless, in a list of the 20 countries most vulnerable to climate-related security risks, climate investments are continuing regardless.³³ In 2017 in these countries a considerable portion of overall climate finance was spent on adaptation (see Table 1).

2.4. Adaptation policy

Additionally, it is important to recognize that adaptation extends far beyond what is donor funded, and can imply changes to laws and policies, as well as to social and economic practice. Adaptation can sometimes imply minimal financial investment, but enormous political capital, as is the case for instance with new mediation or diplomatic dialogue on natural resource distribution and sharing. The investments made by security actors that achieve adaptation outcomes often go unmeasured, meaning that monitoring is not always possible. It is intrinsically difficult to measure and evaluate “prevented conflict”, which impedes investment of political or financial means.

Adaptation is included in many Nationally Determined Contributions (NDCs) to the Paris Agreement on Climate Change, with some countries making this conditional on the availability of funding. Some 35–40 countries refer to the climate-security nexus in their NDCs (dependent on definitions).³⁴ Some discuss migration-related concerns, others highlight ongoing political and security challenges to climate action, and others take a more holistic human security approach. Additionally, adaptation is part of many

national and international resilience and disaster risk plans, and reduction strategies, as well as national development plans. Adaptation does not currently feature in conflict prevention, humanitarian response, peacekeeping or stabilization plans.

3. The Security Case for Adaptation

This chapter illustrates climate-related security risks currently seen between and within countries. It points to some of the many interactions between climate change and security, including the possibility of shocks and risks of climate policy implementation.

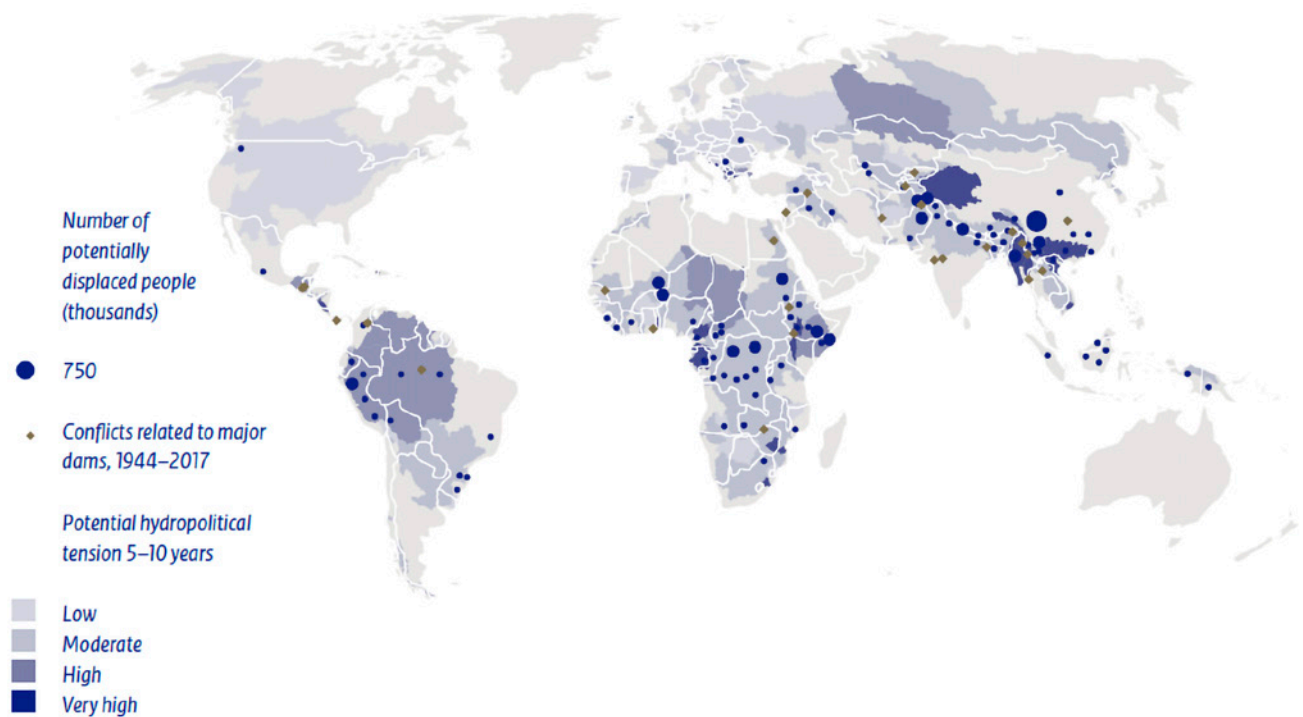
3.1. Interstate security risks

Climate change impacts are already influencing international relations. Here we discuss four examples: transboundary water conflict; food security and trade; the geopolitical implications of melting ice in the Arctic; and risks associated with unmanaged climate-related migration. While there are many more possible examples, these were chosen to illustrate the diversity of possible risks.

Climate change can aggravate tensions in transboundary **river basins**. There might be less water available, or variability may intensify, due to climate change and/or increasing use by upstream riparian countries. The construction of dams for irrigation or hydropower purposes can affect interstate tensions related to power issues and historical mistrust between countries that share rivers. More dams are planned in the future, particularly in Latin America, the Balkans, Asia and Africa.³⁵ Figure 4 is an overview of the level of tension in different river basins, historical conflicts

FIGURE 4

Hydro-political tensions in 5 to 10 years in international river basins³⁶



Source: PBL Netherlands Environmental Assessment Agency

and potentially displaced people due to the construction of new dams. Dam construction in combination with climate change may alter current local or transboundary tensions, depending on how the dams are constructed and their associated governance mechanisms.³⁷ Although increasing water stress has been linked to a heightened risk of hostile interactions between riparian countries, sharing river water has historically led more frequently to collaboration than conflict.^{38,39} and climate-related water scarcity could potentially play a role in peacebuilding.

A second, although less explored security risk, is that which might arise in **international (food) trade**, given its dependence on international infrastructure. Existing pressure on scarce supplies could increase due to climate change in a small number of chokepoints; this in turn could negatively affect trade relations. A particular chokepoint might be exposed to weather and climate hazards, including storms and floods, which could disrupt related routes or render it less efficient.⁴⁰ In 2016, for example, high water in the Mississippi River severely restricted barge shipping, whereas restrictions were imposed in the Panama Canal as a result of drought in the same year. These events could

interrupt transport, conceivably leading to supply shortfalls and price spikes, with consequences that could reach beyond trade markets.⁴¹

A third risk relates to a **melting Arctic**, which will change physical conditions and geopolitical relations in the region. As Arctic ice continues to melt, new shipping routes will open and new, relatively abundant supplies of oil, gas and minerals will be exposed. The physical changes could transform the Arctic from an area of scientific interest and home to predominantly indigenous people, into a maelstrom of competing economic, political, and environmental interests as well as security issues.^{42,43} According to some studies, these competing interests could result in escalating tensions between the nation states in the region.^{44,45} Others argue that the balance is in favor of cooperation rather than conflict.^{46,47} The Arctic case is potentially significant as an international issue, in part because the interests of so many major powers are affected. For this reason, the case is clearly on the radar screen of the military.

A fourth risk that may affect relations between countries and communities is the **displacement and migration of**

An exemplary case study on the debate regarding the security implications of climate change is the Syrian War that started in 2011. According to some studies, drought in the Fertile Crescent contributed to political unrest, via agricultural failure, livestock mortality and large-scale migration.^{48,49} Other scholars dispute the evidence of anthropogenic climate change having affected the situation in Syria.^{50,51,52} There is broad recognition that the country was facing a deepening water scarcity crisis before the civil war, especially in terms of groundwater. This was caused to a large extent by unsustainable agricultural development and policies. In combination with other factors, this led to higher food prices and rural-urban migration.⁵³ While it is not possible to measure the relative contribution of water stress to the outbreak of the Syrian War, there is evidence of declining harvests due to resource mismanagement or drought having been factors in rising food prices, economic marginalization of farmers, and temporary migration.⁵⁴

people as a (direct or indirect) result of climate change. People living in low-lying coastal areas are at risk of permanent displacement, and those living in small island developing states (SIDS) may have to be relocated to other countries.⁵⁵ People living in flood-prone areas, and areas facing increasing water stress or saltwater intrusion, might also be affected by reduced employment and livelihood opportunities, potentially leading to migration movements. Unmanaged mass migration can render migrants themselves highly exposed, especially when social and political tensions arise in host communities. According to the World Bank, up to 143 million people from sub-Saharan Africa, South Asia, and Latin America (representing 55 percent of the global population) could be internally displaced by 2050 because of climate change.⁵⁶ In the same time period, it is estimated that the global population will grow from 7.4 to 9.9 billion, of which 70 percent (54 percent in 2017) will be urban.^{57,58}

3.2. Intrastate unrest and security risks related to climate change impacts

Social unrest within countries can arise as an indirect result of climate change impacts. For example, prolonged and intensified drought can have a major impact on livelihoods, which has in some cases led to violence and recruitment to militias. In fragile regions where resilience has been eroded, slowly increasing economic hardship and insecurity can serve as a tipping point for social and political instability.^{59,60} In some circumstances people are forced to exploit natural resources to survive in the

short term (e.g., cutting wood in times of war), even when knowing that their longer-term survival depends on those very resources.

Climate change impacts in rural regions particularly affect those who depend on agriculture for their livelihoods.⁶¹ In areas where farmers and pastoralists depend directly on rainfall, increasing variability may affect migration patterns and growing seasons, possibly resulting in the aggravation of tensions. Saltwater intrusion or groundwater depletion may have similar effects.

3.3. Climate-related shocks to stability

Acute shocks as a result of climate-related events can affect social, economic and political stability, especially where governance structures are weak. In countries where there is corruption, unequal access to food, or public grievances, food price spikes could be the cause of social unrest, sometimes leading to violent conflict.^{62,63} While shocks such as floods and hurricanes are often linked to climate change, it is important to recognize the role of slow-onset events in contributing to political unrest. The Arab Spring is a recent example: the rise in food prices in the region contributed to major political events, with widely differing consequences and costs in different countries.⁶⁴ Countries heavily dependent on food imports, and where household spending on food is typically high, are particularly vulnerable to spikes in global food prices. In 23 countries, a doubling in food commodity prices would lead to an absolute increase in the consumer price index of more than 10 percentage points. "These include

many of the countries that experienced social unrest during the food price crisis of 2007-08, including Morocco, Bangladesh, Egypt, and Indonesia.”⁶⁵

Hydro-meteorological natural disasters, such as flooding, hurricanes and drought, are common drivers of acute economic shocks, which can affect security on different scales.^{66,67} As poor people are often vulnerable to natural disasters due to their limited access to resources and coping mechanisms, they are harder hit by the impacts of these events than richer people. More vulnerable segments of society are less able to move from disaster-prone areas, like lower parts of deltas.⁶⁸ Therefore, the impacts of disasters might be intensified – possibly resulting in societal chaos (e.g., looting), loss of local safety nets and protective patterns, new political tensions, changing power structures or migration, or even an increase in human trafficking.⁶⁹

3.4. Risks of climate policy implementation: maladaptation and energy transition risks

Adaptation initiatives can heighten security risks when activities are poorly planned or undertaken without an understanding of context. Adaptive infrastructure can exacerbate tensions between communities by increasing inequality, leaving out local voices or harming specific interests. A measure that helps one community to adapt to water scarcity through the introduction of new irrigation structures can, for example, contribute to greater scarcity for smaller producers or for another community downstream. Minorities, women and other vulnerable groups are sometimes least able to accommodate such changes.⁷⁰ Such measures can lead to tensions, from local to interstate level. Numerous cases of maladaptation have been documented: these range from the introduction of new crops that damage ecosystems and livelihoods, to new infrastructure such as a seawall, which might secure a vulnerable area for a limited period, convincing people to live there because it is perceived as safe.^{71,72}

The risk of maladaptation from not considering conflict risks or not engaging with security actors resembles a similar debate in the field of development cooperation. Because of fears about securitization of aid and a desire to maintain distance from corrupt political elites or (military) aggressors, development workers have at times overlooked the importance of political and security dynamics

in their work.^{73,74} Incorporating political economy analysis into planning could help reduce risks of development or adaptation initiatives being exploited.⁷⁵ A conflict-sensitive approach to adaptation, at minimum, seeks to ensure that no harm is caused, and, at a maximum, contributes to sustainable peace.⁷⁶

Although not the core focus of this paper, it needs to be mentioned that mitigation could also result in new security challenges, and adaptive measures might be needed to support peaceful transition to a low-carbon economy. The scale of change being wrought through mitigation is only just being understood. The expansion of renewables may lead to the creation of millions of new jobs, but also to the loss of those working in fossil fuel extraction or with other fossil dependent technologies such as the internal combustion engine. India alone currently employs a million people in the coal industry. Economic restructuring on a massive scale is likely to be destabilizing, especially if governments do not invest in social policies (e.g., retraining) to manage a phased transition. Countries that are highly dependent on fossil fuel rents are likely to be confronted profoundly by stranded assets.⁷⁷ Some of these countries, such as Libya and Iraq, have made little progress towards diversifying their economies, and are thus likely to be hit directly by a major reduction in state revenues.⁷⁸ These transformative economic changes are also likely to have indirect impacts elsewhere: the reduced flow of oil rents could also affect non-oil producing countries such as Lebanon, Egypt and Jordan, where the social contract has been based in part on distribution of rents from regional sponsors.⁷⁹ Furthermore, geopolitics has been significantly shaped by the extraction, trade and use of fossil fuel resources. As the significance of these resources wanes with global energy transition, bilateral and international relations are likely to undergo profound shifts.

4. The Impact of Geopolitical Shifts on Efforts to Address Climate-Related Risks

In considering the potential of climate-related risks to security, it is critical to look at the broader international context. This chapter looks at key geopolitical trends and the risks and opportunities for international action around climate security. It also discusses political and ethical

Social unrest can develop as a result of involuntary land-use changes, often framed as “land leasing” by governments, or as “land grabbing” by local communities and development and aid organizations. Countries may decide to use foreign land for two main reasons: to produce food for national consumption and to produce biofuels to fulfil climate pledges. Countries dependent on food imports, and which are particularly affected by food shortages made worse by climate stresses (for example, Saudi Arabia, Japan and South Korea) are increasingly looking for fertile farmland in African countries, for example Uganda, Madagascar, Mali, Somalia, Sudan and Mozambique, as well as in other developing countries such as the Philippines, Indonesia, Brazil and Kazakhstan.⁸⁰ A controversial example comes from Sierra Leone, where 10,000 hectares of land have been leased by a Swiss company to produce bio-ethanol for the European market, leaving hundreds of farmers without land. Employment opportunities promised to local communities did not meet expectations.⁸¹ As farmers often cannot legally prove that the land they use is theirs, or at least theirs in terms of customary law, governments can legally lease land to foreign governments. This means that already vulnerable people lose their livelihood, which feeds into grievances. The UK followed by the US, United Arab Emirates and China, are the countries that lease the most foreign land, according to a 2012 assessment.⁸²

dilemmas within broader political discussions on the climate-security nexus.

4.1. A shifting peace and security agenda: rising open and protracted conflict

The number of countries experiencing violent conflict is higher than it has been for 30 years.⁸³ Conflicts are multi-dimensional, complex and increasingly protracted. Threats to peace and security extend beyond military targets and have taken root in the political, economic, social, technological and environmental spheres. The shifting balance of power and rise of China as a military and trade power, for instance through its Belt and Road Initiative, has fundamentally altered the geopolitics of traditional East-West and North-South relations.

As such, contemporary geopolitics is driving reforms to existing peace and security practice. Since Secretary-General António Guterres was appointed in 2017 he has set in motion a series of reform processes across the development, peace and security pillars of the UN system. His reforms aim to support the delivery of Agenda 2030, notably through the empowerment of UN Resident Coordinators at country level, and to take a more preventive approach that sustains peace. As the reform process is

ongoing, the UN is currently in a period of flux and evolution where there is considerable opportunity to integrate a climate risk-informed approach.

The intersection of climate and conflict risks increases pressure on international organizations and funds to respond to the greater scale and frequency of climate-related risks. Institutions are already struggling to keep pace with current levels of conflict and other shocks within their existing resource, coordination and knowledge production limits. Consistent with aspirations for the Secretary-General's ongoing reforms, integrated and future-proof planning in international institutions can be extended and supported to overcome the constraints of short-term funding horizons. If climate-security risks are addressed, there is an opportunity to strengthen the capacity of institutions to meet their objectives in a more complex future risk landscape.

Furthermore, as climate impacts, funding for climate action, and vested interests in exploitation of natural resources influence the positions of parties in protracted conflicts, greater understanding of these issues could open up new approaches for addressing climate-related security issues. In some cases, climate impacts might benefit some groups over others or only affect the interests of specific groups (e.g., landowners from abroad), whereas in others

climate change might be a “new enemy” common to all actors, creating potential avenues for dialogue.

4.2. Climate change as an issue on the multilateral agenda

With the international political landscape in flux, major powers are testing the norms of global governance, including multilateralism and the rule of law. Tensions between the permanent members of the Security Council are heightened, and its effectiveness is consequently limited.

Developments in the geopolitics of climate change present potential opportunities for strengthening multilateralism. The Paris Agreement marked a turning point where all countries agreed to transition to net-zero greenhouse gas resilient economies. Despite the announcement by the US of its intention to withdraw from the deal in 2016, every other country voiced their sustained commitment (including the G7 and G20). Increasingly, major economies including the EU, China and parts of the US have hardwired investment and planning for a low-carbon future, making ongoing commitment more likely. Nonetheless, a small and growing group of climate-skeptic countries remains.

A government’s legitimacy depends on its ability to adapt to new challenges and addressing climate-related security risks offers an opportunity for states (and for multilateral institutions) to modernize their approaches and rebuild credibility with citizens. At present, the UN typically receives approval ratings of more than 50 percent of the global population.⁸⁴ Ratings dipped at the initiation of the Iraq war and grew slightly following the adoption of the Agenda for Sustainable Development and the Paris Agreement in 2015. The UN’s effectiveness in addressing climate change may be another major test: if the response is perceived as weak, multilateralism itself could be further called into question.

As with other institutions, the UN is challenged to develop an interdisciplinary approach to climate-related challenges. While climate change was previously the primary purview of one UN institution, namely the United Nations Framework Convention on Climate Change (UNFCCC), today more UN entities are engaged as climate change is recognized as shaping the UN’s ability to maintain and promote peace, security, human rights and development. All UN entities, including those relating to peace and security, now need to assess the risks to their mandates

posed by climate change, and implement management strategies accordingly.

As climate change rises up the international political agenda, it may also pose risks to broader international cooperation. A breakdown in the international response to manage climate risks could reduce the political space for cooperation on climate mitigation, including through a rejection of the Paris Agreement and/or direct and indirect impacts upon trade. In addition, as adaptation becomes more costly domestically and internationally, the fulfilment of pledges made, and expectations expressed by developed countries, could lead to tensions between countries.

There are other scenarios where real and perceived injustices relating to the structural causes of climate change, as well as maladaptation, could exacerbate tensions between countries. For example, when infrastructure investment has an increasingly globalized footprint, questions will arise over responsibility for climate risk associated with maladaptation or in the fall-out of climate extremes.

On the positive side, there is considerable opportunity for well-managed adaptation to help build trust between citizens and their governments. Some degree of climate impact is inevitable, and international cooperation to support a range of adaptation interventions is needed to facilitate local government interventions and community responses as well as infrastructure build. Entities at sub-state level – including cities, regions, businesses and civil society – are increasingly forming coalitions and starting to act. Research has suggested that commitments by such actors can represent a significant step forward.⁸⁵

A multi-stakeholder approach to adaptation can help generate buy-in, especially when acting on hard choices such as managing relocation and loss.⁸⁶ Perceptions of unfairness and inequality should be addressed together with adaptation to manage related tensions between groups in society.

4.3. Managing the ethical and political dilemmas of multilateral support for climate adaptation

A preventive approach to climate-related security risk and adaptation generates political and ethical dilemmas. Effective “early warning” or forecasting processes are likely to highlight locations and livelihoods that could be

rendered unviable by climate change. In the Sahel region, for example, there is growing evidence of local and inter-governmental tensions relating to the practice of trans-humance. Climate change, combined with other social and political factors, may push states to renegotiate or even terminate their arrangements to regulate this longstanding practice of seasonal movement of livestock.⁸⁷

The political, and arguably ethical, dilemma that emerges is therefore whether, and when, adaptive strategies should facilitate acceptance of loss of culture, property or social practice – for example, when migration strategies are appropriate for managing changes in areas that might be rendered “unliveable” by climate change. We already have strong indications that climate change will induce large-scale cultural and economic losses as well as internal migration on a massive scale.⁸⁸ While migration does not in itself lead to security risks, the process often renders migrants vulnerable, and can destabilize destination countries or host communities. To what extent should adaptation strategies therefore seek to enhance the security of both affected populations and potential destination countries by facilitating early managed decline of cultural and economic capital in, or migration from, highly vulnerable areas? These questions need to be considered with great care and attention to context in order to ensure safe and durable outcomes for those most affected.^{89,90}

Significant political and ethical dilemmas may also arise if multilateral support is not received by the most exposed countries and regions. The most vulnerable countries are typically those least responsible for causing climate change, and with least capacity to facilitate effective governance and investment to adapt. In such cases, international actors seeking to reduce emissions could consider the potential of “mitigation through adaptation” by focusing on more resilient ecosystems that absorb carbon emissions and restore livelihoods. In some cases, this may involve shifting the focus of the entire local economy to a completely new model, enhancing resilience through socio-economic transformation. Overall, cooperation between diverse stakeholders will be required to generate buy-in and to support managed transitions to address and manage climate risks. Such cooperation must be built on solid understanding of each stakeholder’s perspectives and interests.

An additional challenge is that international climate finance is poorly equipped to support people in conflict settings who are also dealing with rising climate risks. International climate finance is structured to be delivered through, or at least in close partnership with, national governments. In fragile or conflict-affected settings, governments might not represent the interests of the people most affected by climate change; they might also be poorly equipped to implement or oversee aid programs. This influences the work of organizations seeking to support communities in addressing rising climate risks, especially in the context of protracted crises.⁹¹

5. Adapting Peace and Security Practice

Despite the challenges brought about by shifting geopolitical contexts, efforts to strengthen and diversify approaches to address threats to peace and security are emerging. Within the UN, member states have agreed on the move towards a “preventive” approach that encourages attempts to address the root causes of conflict and violence, and increasingly incorporates climate change impacts as a key consideration in efforts to sustain peace. However, at operational and domestic levels, placing a climate lens on security strategies and practices still needs to mature. This chapter indicates where progress towards addressing emerging climate-related security risks is being made, and what more needs to be done. The following section draws out implications for climate adaptation practice.

5.1. A changing approach to peace, security and conflict prevention at the UN

Since 2015, UN member states have reached near consensus on a conflict prevention focus for the UN, grounded in the Agenda 2030 for sustainable development. In April 2016 the General Assembly and Security Council adopted twin resolutions on the “Sustaining Peace” agenda to support an integrated, risk-informed approach to UN action across peace and security, development, and human rights pillars.^{92,93} A series of reforms in the peace and development institutions are now underway in a bid to operationalize this vision.⁹⁴ The Secretary-General has, in addition, placed environmental degradation and climate change

at the center of the UN's prevention agenda and the new system-wide resilience framework.^{95,96} In July 2018, Deputy Secretary-General Amina Mohammed expressed the determination "to fully mobilize the UN's capacity to understand and respond to climate-related security risks at all levels".⁹⁷

This shift in approach has been welcomed by countries that recognize their own vulnerability to climate change, such as small island developing states.⁹⁸ Such states have long called for a systemic approach to climate-related security risks: limiting emissions through mitigation; adapting to impacts across sectors; and contingency planning for climate-related loss and damage.⁹⁹ Now, when climate change impacts are materializing and impinging on budgets, efforts have begun to bolster the effectiveness of international institutions and collaborate with vulnerable countries to address climate-related security risks.

The Security Council has also requested climate-related security risk analysis and management strategies in a number of country- or region-specific resolutions and presidential statements. In March 2017, the Security Council set a textual precedent in its Resolution 2349 on Lake Chad; since then, the Security Council has replicated this text in decisions on West Africa and the Sahel, Somalia, Mali and Darfur.¹⁰⁰ In the past, some permanent and non-permanent Security Council members have opposed discussion of "non-traditional" security risks. Recent developments in the Security Council relating to climate change, along with those on "sustaining peace", suggest there is growing openness to a diverse and more holistic approach to peace and security – at least in selected contexts.

Despite international agreements to shift UN practices toward prevention, more work is needed to link political analysis to climate action within the UN. The establishment of a small climate security mechanism in New York is a good start: this joint project of the Department for Political Affairs, UN Environment and the UN Development Programme is tasked with enhancing climate-security risk assessments across peace and security and development pillars. But this effort also needs to be accompanied by closer interaction between UN entities at field level to carry out cross-cutting risk assessments and identify ways to build resilience. More work will also be required to support regional institutions' efforts, such as those by the African Union, to understand and address emerging climate-related security risks.

5.2. Adapting security analysis

Military operations continue to dominate domestic and regional security programming, with growing interest and funding allocated to addressing terrorism and cyber security. Some countries and institutions have begun to incorporate analysis of climate-related security risks into medium- and long-term security analysis. For example, the UK's 6th edition of "global strategic trends" identified the increased disruption and costs of climate change to be the most likely and highest risks facing the world.¹⁰¹ Similarly, NATO's 2017 strategic foresight analysis cites climate change as a core and growing risk factor.¹⁰² Other regional organizations, including the European Union, African Union, Association of South East Asian Nations, the South Asian Association for Regional Cooperation, the Economic Community of West African States, and the Intergovernmental Authority on Development (IGAD) have also recognized the links between environmental degradation, climate change, peace and security.¹⁰³

Despite growing recognition that an approach which integrates climate change into security policy is required, its application in practice is limited.¹⁰⁴ The integration of climate change into EU and IGAD early warning mechanisms are notable exceptions. Academics and think tanks have identified broad trends and more specific patterns in some regions but this is not standard practice with security analysts. Nor is existing research typically produced in a format that could be readily applied by security professionals. In many contexts, there is an enduring focus on immediate "hard" security threats, and investment in hard security infrastructure far exceeds what is devoted to managing risk through an integrated approach including diplomacy, investment, technical support, and trade.

The preparedness of military hardware is one area where climate risk has begun to be integrated more systematically. Under the Obama administration, a 2014 survey of military infrastructure identified climate-related risks to military facilities and paved the way for a more proactive approach by the Pentagon which remains today. Similar approaches have been adopted by other military powers including the UK, France and Russia. However, their utility beyond military assets is limited depending on the political will of the broader administration.

In Somalia, national and international actors – including the UN Security Council – have recognized the detrimental impact of climate change on stability.¹⁰⁵ There is also a growing understanding that the recovery of Somalia will depend on implementation of policies to restore watercourses and landscapes, protect coastlines, and provide alternative employment to people whose livelihoods have been devastated by drought. Implementation of such policies is difficult in such an insecure context, although some civil society actors have demonstrated the scope for progress.¹⁰⁶

In the field, some efforts have been made to generate and apply climate-related security risk analyses. A partnership between the EU and UN Environment has led, so far, to analyses of the complex inter-relationship between political and environmental stresses in Nepal and Sudan, as well as to guidelines for risk assessment and programming.¹⁰⁷ Analysis in the two pilot cases led to the identification of links between pre-existing social and political tensions, climate change impacts, and government legitimacy. The identification of such links has contributed to conflict-sensitive adaptation programming in both countries. The experience also highlighted challenges inherent in such work, including those relating to the conduct of forward-looking political analysis and identification of risks in fragile contexts.

6. Adaptation as a Tool for Conflict Prevention and Peacebuilding

Given the scale of risks and challenges posed by climate change, work on adaptation clearly needs to be intensified. However, such work also needs to be conducted with sensitivity to context, and at the appropriate pace, to ensure that transition does not lead to turmoil. This is particularly important in states and regions already affected by tensions and conflict. In several cases, such as the situation in Somalia (see Box 5), a smart use of adaptation may also contribute to fostering peace and stability. The United Nations Regional Centre for Preventive Diplomacy for Central Asia is another example where diplomatic efforts in the sphere of conflict prevention are explicitly linked to adaptation and natural resource management policies.

6.1. The challenge of addressing climate-related security risks

To identify and address emerging climate-related security risks, adaptation strategies need to be:

1. Timely;
2. Political economy-informed; and
3. Strategically targeted.

TIMELY SUPPORT

Adaptation solutions that are most effective in building resilience and addressing climate-related security risks may take time to implement, particularly in fragile and conflict-affected states. Ecosystem-based approaches can, in particular, help build resilience by *inter alia* creating new livelihood options to replace those threatened by climate change impacts.¹⁰⁸ But transformative change may require radically reorganizing systems, which can encounter political and social resistance. With this understanding comes an intensified urgency to make early, carefully designed adaptation investments. Appropriate responses will often involve political coalition-building or mediation to adjust approaches and policies or to anticipate and manage often unequal implications of climate impacts and interventions in adaptation infrastructure. Two very different examples illustrate this point:

The first relates to the adaptation of transboundary water governance. Climate-related changes in precipitation are contributing to reduced availability of surface water, which in turn can increase tensions over the sharing of transboundary water resources. While the negotiation or adjust-

ment of such formal agreements – to minimize conflict risks – should be addressed in any case, it becomes even more pressing in a background of climate change. Preparing the ground for such transboundary negotiations is crucial, but it takes time: diplomats will need to build trust between the parties; technical experts must develop viable joint management/governance options and collate and share data; and states often wish to develop institutional capacity *before* they initiate international negotiations.¹⁰⁹ Seeking to expedite such complex processes may do more to diminish than to build trust between neighbors.

The second relates to effective and efficient adaptation in coastal cities and other vulnerable, highly populated areas. An adaptation strategy should help a society overcome the challenges associated with climate change and move it towards a new more secure *status quo*. The resources available to support adaptation are often extremely limited: it is therefore imperative to invest in strategic interventions that address the fundamental drivers of insecurity. Ecosystem-based solutions can serve as these strategic interventions. They can be both more economical and more durable than engineering interventions, for example in protecting against storm surges associated with sea level rise.¹¹⁰ Yet such approaches cannot always be implemented as rapidly or visibly as can hard infrastructure. Furthermore, timely interventions are needed to help build cultural and economic resilience in cases where the limits of adaptation are met, and relocation becomes the most viable option.

POLITICAL ECONOMY-INFORMED

Adaptation is a political process in which policy and resource decisions are made by those in power. Stakeholders are not always consulted. Measures that result in unequal outcomes for different communities or economic sectors are likely to feed grievances and tensions, which in turn can create social unrest. If managed badly, international finance tied to adaptation programs and infrastructure investment could create a new set of problems resulting from unequal processes. Incorporating political economy analysis effectively in development decisions remains a key challenge, as it is for adaptation investments.

It is important to ensure that adaptation measures do not inadvertently exacerbate tensions or create new conflicts. Practitioners are learning lessons about the need to incor-

porate social and political analysis in adaptation planning. In South Sudan, the construction of water harvesting infrastructure has improved the availability of water in specific locations. However, this investment brought new types of competition and additional environmental degradation, sometimes rendering target communities more vulnerable to violence. Learning from this experience, the UN introduced guidelines to ensure that new water harvesting infrastructure plans are implemented on the basis of “sound understanding of the socio-economic and political contexts that influence the selection of areas around water harvesting structures”, and that “environmental and socio-economic assessments” should be conducted to “determine the likely effects of the project on the target communities”.¹¹¹

Similarly, adaptation planning should be based on a solid understanding of broader political dynamics, including those relating to conflict or conflict risk, and particularly political impediments to change. Adaptation may in some cases need to begin with public awareness raising and political coalition-building, to prepare the ground for technically sound adaptation interventions. This point is increasingly recognized for development activities, but proves difficult to adhere to in practice, since funding is prioritized for actual development activity and time for analysis is lacking. Engaging the stakeholders perceived to be at the root of tensions, conflict and/or human rights violations may also prove complex. Nevertheless, there are examples where Political Economy Analysis (see Box 6) and engagement with local (security) stakeholders has strengthened development activities and outcomes.¹¹²

The case of Jordan illustrates the value of political economy-informed approaches to climate adaptation. Jordan is one of the world’s most water-scarce countries, and its water crisis is intensifying as a consequence of climate change, urbanization, consumption patterns, and population growth (including a large refugee population). The Jordanian government is aware of the scale of its water problem, and of the costs of increasing supply through desalination and exploitation of deep aquifers – yet it has not cut water subsidies to reduce demand, fearing political repercussions. In recognition that successful adaptation in Jordan requires careful political coalition-building, one Jordanian think tank has initiated work to identify constituencies likely to lose most from policies that would reduce

Political Economy Analysis (PEA) helps assess trade-offs and inform decision-making. Effective PEA assesses socio-economic conditions, and domestic and international political drivers. By taking a holistic, systemic approach it exposes winners and losers in ongoing and future change processes. As such, it provides early warning to inform prioritization and guide culturally sensitive interventions. PEA is also helpful because it can demonstrate that a theoretically good policy or infrastructure intervention is inappropriate in a particular context.¹¹³ Instead, more realistic and acceptable interventions can be supported which can quell the ethical dilemmas previously discussed in this paper.

Examples of Political Economy Analysis Toolkits	
Department for International Development	General PEA toolkit ¹¹⁴
WaterAid	General PEA toolkit ¹¹⁵
Food and Agriculture Organization	Food Security and Nutrition PEA Toolkit ¹¹⁶
E3G	Climate-related Financial Disclosure PEA Toolkit ¹¹⁷

water demand, and has proposed ways to incorporate their views into policy development – thus helping to build political support for sustainable adaptation approaches.^{118,119} The underlying idea is that successful adaptation must start not with new infrastructure, but with a political strategy for implementation.

Recognizing the political nature of climate adaptation also has implications for donor approaches to this issue. Peacebuilding and mediation practitioners understand that their work requires a high degree of flexibility: to read shifting political dynamics; to account for competing interests; and to adjust strategies to take advantage of emerging opportunities. Environmental peacebuilding requires a similarly flexible approach: as one practitioner put it, working in conflict-affected contexts requires entrepreneurialism, “lots of trial and error”, a willingness to try opportunities, and preparedness “to fail... how else can we learn?”.¹²⁰ Politically informed and sensitive adaptation, like environmental peacebuilding, will require flexible funding, together with donor recognition of critical but intangible outcomes such as changes in public or political attitudes. Such flexible funding approaches are sometimes tolerated in peace and security initiatives but are relatively

rare in the development sphere. Only one tenth of global climate funds flow into local level climate action missing local insights and innovations.¹²¹

STRATEGICALLY TARGETED

To address emerging climate-related security risks effectively, adaptation needs to be **targeted to support states and societies in which climate change impacts have potentially major domestic or international security consequences**. Global as well as local studies combining data on climate vulnerability and conflict risk, as well as early warning approaches such as EU Inform, need to be used. Such studies could benefit from more analysis on the ground that combines local climate vulnerability with political economy analysis. This should focus on actors and networks of power, influence and (vested) interests in a country, and on their incentives regarding adaptation.¹²² Foresight and scenario studies can also help states, donors and international actors to define and prioritize resources to address climate-related security risks. A more direct and targeted Climate and Development finance system can stimulate inclusive climate investment.¹²³

6.2. Choosing an adaptation path that addresses tensions and maximizes scope for cooperation

Several international institutional changes are needed to ensure timely, politically informed and strategically targeted adaptation strategies that address emerging climate-related security risks. Many of these changes involve a high degree of interaction and joint planning among development, diplomatic and security practitioners.

Timely adoption of adaptation strategies **requires enhanced interdisciplinary engagement to provide early warning of emerging climate-related security risks**, and to link such warnings to additional political analysis and policy decisions. Although climate scientists provide increasingly detailed and downscaled forecasts of the physical impacts of climate change in specific locations, anticipating the political and security consequences of those changes requires a complementary and more qualitative approach. The social and political consequences of drought, for example, vary according to the strength of social coping strategies and government responses, as comparative research into the 2008–09 drought in Syria and Turkey shows.¹²⁴

In developing mechanisms to provide advance warning of emerging climate-related security risks through mapping the physical impacts of climate change against indicators of political and social change, policy makers could benefit from cooperation and approaches from defense and security planners. The latter are more accustomed than foreign policy actors to longer-term strategic forecasting and have developed processes for mapping the interactions between slow-onset changes and faster-moving political or social developments.¹²⁵

Ensuring that adaptation strategies are informed by political economy analysis also requires deeper, more frequent cooperation between development practitioners, economists, and political affairs professionals. At present, states and development practitioners often conceive of adaptation in sectoral or project terms.¹²⁶ But given the scale and scope of challenges presented by climate change, adaptation is perhaps better understood as a process of social, political and economic transition to a new *status*

quo, within which people will use resources differently and, in some cases, move to different locations or livelihoods. Such a comprehensive transition process inevitably generates stresses, winners and losers. How the stresses created by these transitions are planned for and handled can make the difference between smooth adaptation, or tension and conflict. Understanding these stresses requires careful interdisciplinary analysis of the political alliances and economic interests, which interest groups will be most deeply affected by the climate-related transitions ahead, and how these political and economic shocks could be managed and mediated by a diverse range of stakeholders.

Close interaction between political analysts, development and security practitioners, and local researchers is also required to help governments identify an “adaptation vision” that will address medium- to long-term strategic risks. This process would differ from current, often incremental, national adaptation plans (NAPs), which tend to take a patchwork project approach rather than engaging in structural and comprehensive planning that includes preventive methods of managing climate-related security risks. This process of adapting to the new reality of temperature and sea level rise requires advanced planning capabilities and sufficient resources, and – not least – the cooperation and approval of citizens. Countries facing political and security challenges often lack transparent mechanisms through which to engage with citizens, to explain why adaptation is necessary, and to discuss viable solutions for those most affected.¹²⁷ In such cases, crafting an engagement strategy with the government, leading to implementation of an effective adaptation “vision”, may require a concerted approach by climate scientists, technical experts, local communities, civil society, and diplomats with scope to engage at the highest level of government, and donors. In the absence of such a concerted approach, adaptation may be delayed, leading to poor preparedness, unmanaged social and political disputes, and increased likelihood of conflict.

6.3. Action to maximize the benefits of cooperation over natural resources

Cooperation over adaptation and resource management between countries, assisted by knowledge institutes or development organizations, can improve security relations

The aim of the 3S initiative – “Sustainability, Stability and Security” – is to address the root causes of instability in Africa, particularly migration and conflict related to land and resource degradation. The objective is to create jobs for young people through the restoration of degraded lands, while also taking into account land access and tenure rights and establishing early warning systems to predict drought and other extreme climate events. More specifically, the project intends to create two million jobs and rehabilitate 10 million hectares of land by 2025. The initiative was established at the margins of the UNFCCC COP22 in Marrakech by Senegal and Morocco and endorsed by African leaders at the 1st African Action Summit. A land restoration pilot project has, for instance, been launched in Agadez, Niger, aiming to restore at least 470 hectares of land, creating also 470 jobs for unemployed young people and migrants. Other 3S projects based on land restoration for the reintegration of vulnerable groups, including young people, migrants and women, are under development. Benin, Burkina Faso, Central African Republic, Chad, Gambia, Ghana, Mali, Niger, Nigeria, Senegal, Zambia and Zimbabwe have already set their restoration and employment targets and are now moving into the resource mobilization phase.

Several other initiatives also focus at restoring land and forests in Africa, including the Great Green Wall, the Bonn Challenge on landscape restoration, the New York Declaration on Forests and the AFR100 Initiative that aims to bring 100 million hectares of forests and degraded lands under restoration across Africa by 2030.¹²⁸

and pave the way for further cooperation. The UN has summarized lessons and good practice for mediating natural resource disputes, and for environmental peacebuilding: such lessons will become increasingly important to diplomats and security practitioners as climate-induced resource scarcity intensifies.^{129,130} Examples of cooperation over natural resources can be found from the drylands of North Africa to the Hindu Kush-Himalaya region (see Boxes 7 and 8).¹³¹

7. Maximizing the Potential of Adaptation to Support Peace and Security Objectives

We are only beginning to comprehend the extent to which climate change will transform societies, states, and international relations. Many people living in coastal regions and cities will need to move permanently to new homes. Some livelihoods will cease to exist, while new ones may emerge. The transition to renewable energy will reshape economic and political relationships within and between states.¹³²

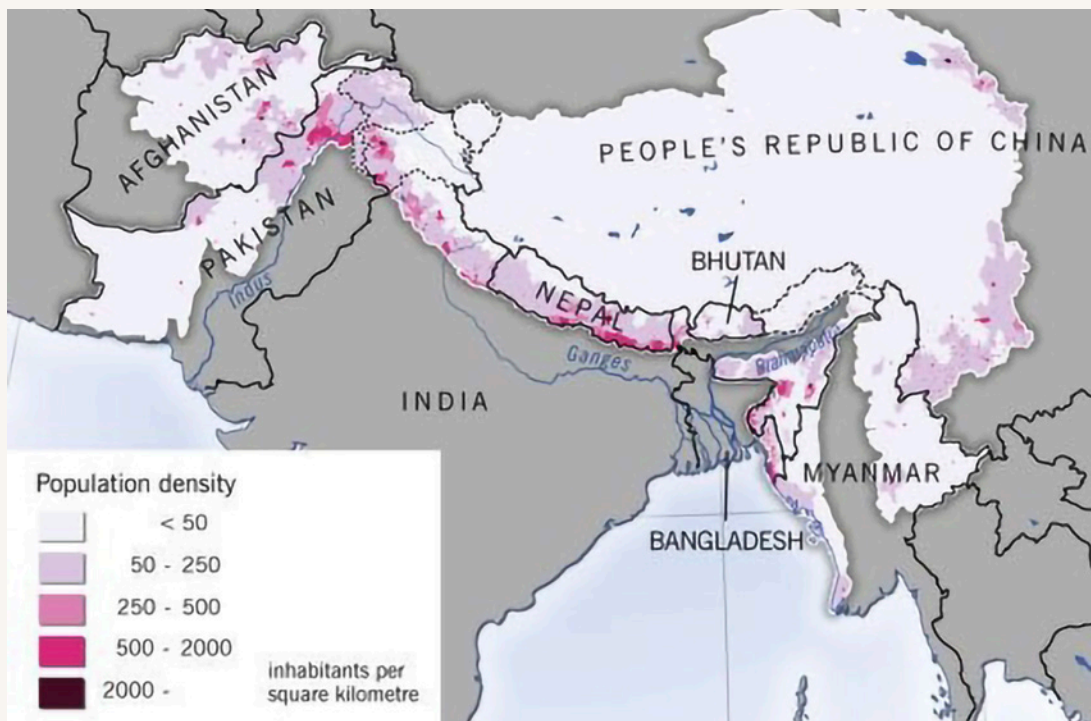
This is a critical moment to enhance our collective understanding of how societies and states can adapt safely, absorb these transformative changes and move to a new *status quo*. For states with open political cultures and advanced institutional planning capabilities, this transition process will nevertheless present many challenges. But states and societies already experiencing high social tensions, violence or conflict are likely to face many more complex challenges to adaptation. In these contexts, adaptation strategies need to be prepared with care: time and careful sequencing will be required to put optimal solutions in place without exacerbating tensions. Development of a politically informed adaptation “vision” that addresses the needs of different interest groups affected by the transition process will be critical in fragile contexts where conflict risk is high.

The potential to use adaptation for conflict prevention and peacebuilding is still underexplored. This report has illustrated with many examples of how climate change and security are closely intertwined and what could be done to ensure that adaptation interventions support peace and security objectives. Below we summarize key messages and recommendations.

BOX 8**Advancing cooperation in the conflict prone Hindu Kush-Himalaya region**

The Hindu Kush Himalayan (HKH) Mountains are the source of 10 major river systems and provide vital ecosystem goods and services to more than 1.4 billion people. Political disagreements, geopolitical tensions and a lack of legal arrangements for sharing information are increasing the region's vulnerability to natural disasters, particularly floods, droughts and land erosion. Although distrust is high, the countries are increasing their cooperation on climate change issues, although there is still a long way to go. The 2007 IPCC report and major floods in 2007 and 2008 served as a wake-up call for the region, as a start to collectively address climate-related challenges.

Improved cooperation could enable better cross-border flood preparation, ecosystem management, and water and energy sharing to optimize resource use in the region and could even serve as a conversation starter on other topics. Umbrella organizations such as the International Centre for Integrated Mountain Development (ICIMOD) have made serious efforts in recent years to increase cooperation on flood control by sharing information, organizing joint workshops and developing early warning systems. ICIMOD has been working on regional and national flood information systems to share data and information and thereby improve lead time for taking risk reduction measures. Their experience is that governments can and will collaborate on science and development issues, even when political negotiations are difficult.¹³³ This is partly because these governments increasingly realize that the risks require a joint development of resilience and adaptation strategies including disaster risk reduction, information sharing and regional water management between border communities.¹³⁴ Another initiative, the HKH Glaciers and Mountain Economy Network launched in 2018 by Nepal, Bhutan, India, Afghanistan and Pakistan, focuses cooperation on dealing with climate change and pollution.

FIGURE 5 The HKH region and population density¹³⁵

Key Messages

- Climate change is disrupting assumptions in conflict prevention and peacebuilding practices. Climate change impacts may transform political and economic patterns and relationships, leading to new instances and forms of conflict. In view of these changes, an overhaul in analysis, programming and financing is urgently required.
- The lack of full academic consensus on the relationship between climate and security is no excuse not to act. A precautionary approach is essential: climate change is likely to aggravate conflict risks, so preventive action is urgently needed. Of course, steep reduction of greenhouse gas emissions is the long-term remedy to reduce climate-related security risks, but in the absence or inadequacy of such action, and given the already prevailing effects, other options to reduce and address those risks must be considered.
- Adaptation action is urgently needed in regions with high degrees of fragility. Risks associated with investments in such regions cannot justify shying away from adaptation finance, particularly as there is ample scope to tie adaptation investments to peace and stability policy objectives.

Recommendations

The following recommendations aim to support governments and multilateral institutions to effect adaptation that helps to manage climate-related security risks.

- **Create or update systems for multidimensional early warning to support early response to emerging climate risks.** Such systems must be capable of tracking environmental changes in a geospatial context and mapping them against livelihood dependencies and against social, political and security factors on multiple timelines. Findings should be integrated into peace and security analysis and decision-making. To fulfil this recommendation, more investment by governments and multilateral institutions will be required.
- **Facilitate risk-tolerant financing** for adaptation initiatives in insecure locations. Flexibility is required to adjust approaches to political contexts, and to permit implementers to explore opportunities for environmental peacebuilding.
- **Develop nexus financing instruments** to implement adaptation projects that arrive at multiple, mutual development and security outcomes. Although calls for such integrative approaches are not new, adaptation projects funded by development aid often shy away from integrating security objectives or favoring mediation and diplomatic approaches. Similarly, conflict prevention, peacekeeping and stabilization funds are not incentivized to support investments with adaptation co-benefits.
- **Borrow from the peace and security toolbox to support adaptation activities that include mediation, (public) diplomacy and outreach** to prevent compounding negative power dynamics and inequalities, which could heighten conflict risk. Adaptation activities are often framed and implemented in a technical way, whereas the support of local populations and awareness of tensions between groups of society are of utmost importance for successful implementation, particularly in insecure or volatile locations.
- **Realign multilateral and government policy to facilitate timely, political economy-informed and strategically focused adaptation efforts:**
 - **Taking the long view with urgency** is critical because the adaptation solutions that are most effective in building resilience and addressing climate-related security risks may take time to implement, particularly in fragile and conflict-affected states.
 - **Enabling politically informed approaches** to help adaptation planners understand different and competing perspectives and interests, anticipate resistance from affected stakeholders, and build consensus for change.

- **Targeting states and societies where climate change impacts have potentially major domestic or international security consequences.** Given the political nature and timescale for designing and implementing effective adaptation strategies, countries, donors and multilateral institutions should award immediate and priority attention to boosting adaptation work in states and regions facing **medium-term high-impact risks**.
- **Systematically draw on private sector and civil society analysis of climate risks and vulnerabilities** for adaptation, thus helping to build broad societal consensus for interventions as well as highlighting risks to governments. Supporting the involvement of independent actors is particularly relevant for exposing vested interests and creating the political space for breaking with the status quo.
- **Integrate multidimensional analysis that incorporates non-traditional security risks into standard security analysis processes,** recognizing the destabilizing influence of climate change on the international order as well as on prioritization, decision-making, and peace-keeping and stabilization programming.

ENDNOTES

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