CLIMATE-RELATED SECURITY RISKS

Towards an Integrated Approach

MALIN MOBJÖRK, MARIA-THERESE GUSTAFSSON, HANNES SONNSJÖ, SEBASTIAN VAN BAALEN, LISA MARIA DELLMUTH AND NIKLAS BREMBERG

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Preface

The security implications of climate change have attracted increasing attention in policymaking and research circles since the early 2000s. Since climate change has far-reaching implications for human livelihoods and activities, the potential security implications are broad and complex. Responses from different policy communities—foreign affairs, defence, crisis management, environmental and development—are therefore required. These communities are currently at different stages of developing strategies to integrate climate-related security risks into their work.

This report focuses on the incipient efforts by policy organizations to address this topic. It aims to produce relevant insights and practical alternatives to help address and work with the security risks posed by climate change. To achieve this goal we conducted an extensive review of the topic—as summarized in a policy brief published in November 2015—and three in-depth studies published as separate reports: on the climate-conflict link; on policy responses by three development organizations; and on policy responses by the European External Action Service.[1] We also held informal discussions throughout this work and organized two workshops with Swedish agencies and organizations who in different ways face these challenges in their daily work. This report synthesizes these works.

The primary audience for this report are policymakers and practitioners who face and seek to address climate-related security risks. We also believe that the report will be of interest to the scholarly community, research funding agencies, donor organizations, and members of the general public with an interest in these issues.

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[1] Mobjörk, M. et al., 'The role of multilateral organisations in addressing climate change and its security risks', Policy brief, November 2015; van Baalen, S. and Mobjörk, M., *A Coming Anarchy? Pathways from Climate Change to Violent Conflict in East Africa* (Stockholm University and Stockholm International Peace Research Institute: Stockholm, 2016); Gustafsson, M. T., *How do Development Organisations Integrate Climate and Conflict Risks? Experiences and Lessons Learnt from UK, Germany and the Netherlands* (Stockholm University: Stockholm, 2016); and Sonnsjö, H. and Bremberg, N., *Climate Change in an EU Security Context: the Case of the European External Action Service* (Stockholm University and Swedish Institute of Foreign Affairs: Stockholm, 2016).

Academy, the Swedish International Development Cooperation Agency, the Dag Hammarskjöld Foundation, Diakonia, the Swedish International Water Institute, the Swedish Civil Contingencies Agency and the Swedish Meteorological and Hydrological Institute who provided us with valuable insights into their practical experience of the opportunities and challenges associated with working with these issues. Nonetheless, as authors of this report, we are solely responsible for the content and the views it reflects. Finally, we are grateful to the Swedish MFA who made this study possible.

Malin Mobjörk,

Project leader and Senior Researcher at SIPRI

Abbreviations

ASEAN	Association of South East Asian Nations
AU	African Union
CAN	Comunidad Andina (the Andean Community)
CSDP	Common Security and Defence Policy
DFID	Department for International Development (UK)
ECHO	European Commission humanitarian aid and civil protection
ECOWAS	Economic Community of West African States
ECP	Environmental Cooperation for Peacebuilding
ENVSEC	The Environment and Security Initiative
EEAS	European External Action Service
EU	European Union
GCCA	Global Climate Change Alliance
GIZ	German Society for International Cooperation
IcSP	Instrument Contributing to Stability and Peace
IWG	Interdepartmental working group
INTCEN	Intelligence and Situation Centre (EU)
IPCC	Intergovernmental Panel on Climate Change
MFA	Ministry for Foreign Affairs (Sweden)
NEPAD	New Partnership for Africa's Development
OCHA	Office for the Coordination of Humanitarian Affairs
OSCE	Organization for Security and Cooperation in Europe
PI	Partnership Instrument
PSC	Peace and Security Council
SADC	Southern African Development Community
SDGs	Sustainable Development Goals
UCDP	Uppsala Conflict Data Program
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNHCR	United Nations High Commissioner for Refugees
UNISDR	United Nations Office for Disaster Risk Reduction

Executive summary

The most recent assessment report on climate change by the Intergovernmental Panel on Climate Change has established beyond doubt that human activities have altered the earth's climate system. Climate change is now widely recognized as one of the major forces shaping the future, and is an example of how human actions fundamentally affect the basic physical processes of the world, with far-reaching and, at in the worst case scenario, disastrous consequences for human societies. Given these profound impacts, climate change is increasingly being treated as a security risk. Because of the diverse impacts a changing climate is having and will continue to have across the globe, the security challenges are of a multifaceted character, involving human, community, state and international security. Effective policy responses in different policy areas will be pivotal to addressing these risks.

This report provides an overview of climate-related security risks and policy responses for addressing those risks. It does this by, first, analysing six thematic areas in which climate change can pose security risks, and then investigating how policy organizations integrate climate-related security risks into their policies and practical work. The overarching aim is to contribute practical alternatives on how to address and work with climate-related security risks. The study provides a deeper understanding of the opportunities and challenges presented by different integration strategies. We believe that this knowledge is required to allow policymakers to accurately assess the value of current strategies and identify how policies, strategic guidance, internal organization and procedures could be improved in order to respond better to climate-related security risks. The report is based on a review of academic articles, policy reports and policy documents, as well as interviews with practitioners and policymakers.

Investigating climate-related security risks

As mentioned above, the report has a two-fold purpose: to investigate climate-related security risks and to outline the policy responses to those risks. Chapter 2 introduces our approach to investigating climate-related security risks and presents six thematic areas involving such risks: water security; food security; sea level rise and coastal degradation; extreme weather events and weather-related disasters; climate-related migration; and violent conflict. Since a key question is when and under what circumstances climate-related security risks evolve, we also present a case study on the pathways from climate-related change to violent conflict in East Africa.

Chapter 2 comes to four major conclusions. First, the way in which climate-related change increases security risks, including violent conflict, is dependent on the ability of societies to respond to stress. *Governance structures and adaptive capacity* are therefore critical mediating factors that affect the security implications of climate change. Second, the security risks posed by climate change inter-

act with one another—water scarcity affects food security, and food security could increase social unrest and violence. Greater attention is needed on how these interactions affect a given thematic issue or geographical area. To respond effectively to these risks, *integrated approaches are required*. Third, climate-related security risks are *transmitted over time and space*. Some risks are delayed, while others manifest themselves as rapid onset disasters. Moreover, consequences in one locality can have major implications in other distant locations. Policymaking needs to pay careful attention to this and better include the trans-boundary and long-term implications in its responses. Fourth, even though climate change is a global phenomenon, *the impacts are characterized by far-reaching inequalities*. Already vulnerable people and societies are often the most severely affected. This raises fundamental moral issues about equity, justice, vulnerability and power relations. Greater efforts need to be taken in the security-oriented analysis to address how different groups and communities are affected by climate change and how these risks can be reduced.

The responses of selected policy organizations and suggestions for improving strategies for integrating climate-related security risks

Chapter 3 examines how different policy organizations have responded to climate-related security risks. First, it provides an overview of how a number of United Nations agencies and regional organizations have framed and incorporated these risks into their work. Second, two in-depth studies are presented on the opportunities and challenges faced by two types of policy organization in their efforts to integrate climate-related security risks into their work. The organizations are: the European External Action Service and the development organizations in two European countries (Germany and the United Kingdom). None of these organizations has climate change as part of its core mandate so each faces a challenge to integrate climate change into its different issue areas.

The case studies show that while policies are often ambitious, they are formulated at a relatively abstract level and generally not implemented by the organizations in a systematic fashion. Based on these cases, the chapter makes four suggestions on how to improve strategies for integrating climate-related security risks. First, *mainstreaming* climate change might help to raise awareness of its possible security implications, but needs also to be complemented with integration strategies. To ensure that climate risks are taken into account in analysis and programming, it is important that staff members have the necessary resources and capabilities, as well as effective follow-up procedures. Second, there is a need to *develop analytical tools* that can improve the organizations' work in this area. This involves for example methods to analysing climate risks and to develop climate-sensitive tools for conflict prevention. Third, rather than adding a security dimension on to existing efforts on climate action, *a 'climatization' of other policy areas is needed*, which means addressing how climate-related change affects existing policies and could create new situations of insecurity. Fourth, it is essential to *improve coordination across policy areas*, preferably around specific projects

based on a common strategy. In order for such projects to be effective, the objectives need to be clear, actors need to be provided with incentives to get involved, and sufficient resources must be allocated to facilitate the cross-fertilization of expertise.

Improving policy responses to climate-related security risks

Chapter 4 uses these insights to outline a number of overarching reflections on how to improve policy responses to climate-related security risks. As is clearly shown throughout the report, a changing climate poses considerable security risks and could under some conditions even increase the risk of violent conflict. While policy organizations have started to address these challenges, there is a need to develop these efforts further and to work in a more integrated and context-sensitive manner. The chapter presents a number of overarching but at the same time practically oriented options for policymakers and practitioners:

- Currently, different policy communities use different concepts to frame the security risks posed by climate change. *Identifying common concepts* can facilitate collaboration and mutual understanding and reinforce coordinated responses across policy communities.

- To ensure effective implementation it is important to *develop organizational structures* to strengthen coordination. The report identifies two complementary strategies for overcoming silos: the creation of interdepartmental working groups and drawing upon the assistance of external expert units for the coordination of the work. Incentives and resources are also critical to enable policymakers and administrators to work across silos both within and across governmental bodies and public authorities. Sustained and coherent leadership will be essential to achieve this.

- Closer cooperation between policymakers, practitioners and researchers will be needed in order to *provide systematic and profound knowledge* on climate-related security risks. Policymaking, practical work and research need to be conducted in parallel, and they should inform each other. Increased collaboration and movement between these different domains can strengthen both policy and research. Experience also shows that expert units can undertake the function of translating research into policy.

In sum, climate change poses multiple security risks for societies across the globe. These risks are transmitted over time and space and are manifested differently depending on the context. Since these security risks span different research and policy areas, the challenges also involve overcoming disciplinary and organizational barriers. To achieve this, *strategic guidance based on long-term thinking* is required. Leadership is therefore vital in order to develop the required preventive

measures that will contribute to human security, sustainable development and peace.

Suggestions for the Swedish policy context

The above conclusions are generic in character. Since this report has been commissioned by the Swedish Ministry for Foreign Affairs, we end with a list of specific policy suggestions for the Swedish context:

- Set up an interdepartmental working group to coordinate the Swedish Government's work on climate-related security risks;
- Establish an external expert unit that can support the government and relevant agencies by providing policy relevant analysis on climate-related security risks;
- Arrange an annual conference on climate-related security risks across departments, agencies, research departments and institutes to create a forum for knowledge sharing and mutual learning on approaches, methods and experience of work already conducted;
- Arrange training courses for staff and policy advisers across departments and agencies on the security risks posed by climate change across thematic areas and how they are interlinked;
- Strengthen Swedish policymaking on climate-related security risks in the Swedish international delegations on regional and international organizations, as well as at the Swedish embassies;
- Identify the relevant actors—organizations and countries—to collaborate with on international policymaking, and develop partnerships that can influence international and regional policymaking in line with Swedish goals; and
- Take into account previous experiences of working with integrated approaches from related policy areas.

Keywords: climate security, climate risks, climate change, security, human security, international security, violent conflict, global and regional organizations, integrated approaches

1. Introduction

Humans and human societies are ultimately dependent on nature. All essential aspects of human life originate in nature, be it food, water, energy or shelter. Humans live in substantially different environmental and climatic conditions. These diverse conditions have posed various forms of security challenge over time: drought, heavy precipitation, wildfires and cyclones. Moreover, humans have also transformed nature throughout history. However, we are witnessing today a change in both the magnitude and the speed of this transformation, as human activities also alter the earth's climate system. This lies behind the assertion that we have entered a new era, the Anthropocene.[2] This not only affects all the types of changes already experienced in nature, but involves also new features such as increased levels of carbon dioxide in the atmosphere and oceans, and unprecedented sea-level rise.[3]

Given this alteration in the earth's climate system, and the fundamental impacts that will follow for the biosphere and human societies, climate change is increasingly being treated as a security risk. Its diverse impacts mean that the security risks that might follow on climate change differ in character. The fifth assessment report of the Intergovernmental Panel on Climate Change (IPCC) concluded that climate change will, among other things, progressively threaten human security, lead to forms of migration that compromise human security, contribute to factors that increase the risk of violent conflict, affect vital transport, water and energy infrastructure, and increasingly shape conditions of security and national security policies.[4] Consequently, different policy areas such as foreign affairs, development cooperation, defence, humanitarian aid, trade, the economy and agriculture are being or will be affected in various ways by climate change. The success of mitigating climate change and developing adaptive capacity to its impacts will be crucial to the ability to achieve the Sustainable Development Goals (SDGs).

This report offers an overview of the security risks posed by climate change and the responses to these risks by various organizations. The overall aim is to provide practical alternatives on how to address and work with climate-related security risks. It does this, first, by analysing the diversity of the security risks posed by climate change, in order to consolidate the knowledge of these risks; and, second, by investigating how policymakers and practitioners integrate these risks into their policies and practical work. The selected organizations that are

[2] Waters, C. N. et al., 'the Anthropocene is functionally and stratigraphically distinct from the Holocene', *Science*, vol. 351, no. 6269 (2016), p. 2622; and Dalby, S., 'Anthropocene formations: environmental security, geopolitics and disaster', *Theory, Culture and Society*, 11 Aug. 2015.

[3] Oppenheimer, M. et al., 'Emergent risks and key vulnerabilities', eds C. B, Field et al., *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge and New York: Cambridge University Press, 2014), pp. 1039–99.

[4] Adger, W. N. et al., 'Human security', eds C. B. Field et al., *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge and New York: Cambridge University Press, 2014), pp. 755–91.

the focus of this study have a mandate for security policy, foreign affairs and development cooperation. The report provides a deepened understanding of the opportunities and challenges of different integration strategies. In particular, the report demonstrates the importance of working in a more integrated and context-sensitive manner. We believe that this knowledge is essential to enabling policymakers to (*a*) accurately assess the value of current strategies in this regard, and (*b*) to identify how policies, strategic guidance, internal organization and procedures could be improved in order to better respond to the security risks posed by climate change.

Chapter 2 explores climate change and security. After introducing our approach to the topic (section 2.1), it outlines how climate change affects a number of areas, such as water and food security, migration, violent conflict, and weather-related disasters (section 2.2). Since a key question when analysing climate-related security risks is whether and under what circumstances such risks are increasing, we present a case study on the pathways from climate-related change to violent conflict in East Africa (section 2.3). Importantly, this analysis builds on both quantitative and qualitative research. Chapter 3 addresses how international and regional organizations address climate-related security risks. After a short overview of how the integrated approach has become a common approach taken by many organizations (section 3.1), we present an overview on how some multilateral and regional organizations address climate-related security risks in their work (section 3.2). Two in-depth analyses of how two kinds of organization work with integrated approaches examine the European External Action Service (section 3.3) and two European countries' development organizations (section 3.4). The chapter concludes with some suggestions on how to strengthen work on climate-related security risks (section 3.5). The final chapter synthesizes the findings and suggests ways forward for policymakers and practitioners to address and integrate climate-related security risks (section 4.1). The report ends with some suggestions on this issue directed specifically to the Swedish policy context (section 4.2).

2. Understanding climate-related security risks

This chapter introduces the climate change and security field and explores the theoretical linkages presented in the literature. Section 2.1 presents our approach to addressing and investigating the security risks posed by climate change: context-dependency, a risk-based approach, comprehensive security and climate-related change. Section 2.2 provides a deepened understanding of the impacts of climate change on water and food security, migration, weather-related disasters and violent conflict. Since a key question when analysing climate-related security risks is whether, and if so under what circumstances, such risks are increasing, section 2.3 presents a case study on pathways linking climate-related change to a specific form of security challenge—violent conflict. The concluding section summarises the central points in the chapter.

2.1. Our approach to climate and security

To gain analytical leverage, this section provides the reader with the conceptual points of departure of this report. This approach enables us to disentangle the complex interplay between climate change and its impacts on societies and human well-being. We highlight them here because they inform the way we address the subject area and help us interpret the security risks posed by a changing climate.

Context-based vulnerabilities

The impacts of climate change on human societies depend not only on the magnitude and speed of climate change, but also on the unequally distributed vulnerabilities and adaptive capacity within and between societies.[5] The same impact can therefore lead to different outcomes, depending on the context, which makes it important to analyse context-based vulnerabilities. As a result of this context-dependency climate change should be understood as exposing already existing vulnerabilities rather than causing them.[6] Hence, climate change does not inevitably cause insecurity; it instead increases the risk of insecurity.

A risk-based approach

Given that context-based vulnerabilities also alter over time, we follow the approach taken by the IPCC and adopt a risk-based approach to analysing how climate change might impact security—see box 2.1.[7] A risk-based approach has

[5] Steinbruner, J. D., Stern, P. C. and Husbands, Jo. L., *Climate and Social Stress: Implications for Security Analysis* (National Academies Press: Washington, DC, 2013); and Ojha, H. R. et al., 'Policy without politics: technocratic control of climate change adaptation policy making in Nepal', *Climate Policy*, vol. 16, no. 4 (2016), pp. 1–19.

[6] Brklacich, M., Chazan, M. and Bohle, H., 'Human security, vulnerability, and global environmental change', eds R. Matthew et al., *Global Environmental Change and Human Security* (MIT Press: Cambridge, MA, 2010); Adger et al. (note 4).

[7] IPCC, 'Summary for policymakers', eds C.B. Field et al., *Climate Change 2014: Impacts, Adaptation, and Vulnerability, Part A: Global and Sectoral Aspects, Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press: Cambridge and New

Box 2.1. Risks versus threats

The negative effects of climate change are often referred to as a security *threat* in the policy-oriented literature. They are even compared to the threat posed by terrorism. By contrast, we prefer to talk about security *risks*. By doing so, we stress that climate change must not be seen as predominantly external in its cause, but rather exposes risks that are inherent in modern societies, leading to situations of insecurity. While responding to threats is often based on the logic of zero-sum games, with defined winners and losers, the risk approach acknowledges the difficulties of disentangling oneself from a web of risks in modern societies. Thus, the risk approach has the potential to recognize the interdependencies that are crucial for responding to the multifaceted character of the climate-related security risks posed to humans and societies.

Sources: CNA Corporation, *National Security and the Threat of Climate Change* (CNA Corporation: Alexandria, Virginia, 2007); European Commission, Climate Change and International Security. Paper from the High Representative Javier Solana and the European Commission to the European Council, 2008, S113/08; Worldwatch Institute, 'Climate change poses greater security threat than terrorism', *Global Security Brief* no.3 (2005); Oxford Research Group, *Global Responses to Global Threats: Sustainable Security for the 21st Century*, Briefing Paper, June 2006; Mobjörk, M. et al., 'The role of multilateral organisations in addressing climate change and its security risks', Policy brief, Nov. 2015; Dalby, S., *Security and Environmental Change* (Polity: Cambridge, 2009); Beck, U., 'Living in the world risk society', *Economy and Society*, vol. 35, no. 3 (2006), pp. 329–45; and Trombetta, M. J., 'Environmental security and climate change: analysing the discourse', *Cambridge Review of International Affairs*, vol. 21, no. 4 (2008), pp. 585–602.

advantages due to the inherent uncertainties involved in analysing the consequences of climate change. Although many of the risks posed by climate change lack statistical data on their likelihood to occur and their precise consequences, there is enough information to understand the magnitude of the expected long-term impacts of climate change. The lack of statistical data affects how risk analysis can be conducted. Climate risks are characterized as: *multifaceted*, involving different consequences such as flood, drought and so on; *multidimensional*, ranging from local to global; and having *short-, medium- and long-term implications*.[8] The analytical framework to analyse climate risks needs to capture this complexity and pay attention to the possibility that climate risks also involve both rapid and slow onset disasters.

Comprehensive security

Since climate change affects the biosphere and human societies in various ways, different policy actors and researchers employ different approaches to security in their analyses of the security risks posed by climate change. These range from human security to state-based security approaches. That policymakers

York, 2014), pp. 1–32.

[8] O'Brien, G. et al., 'Climate change and disaster management', *Disasters*, vol. 30, no. 1 (2006), pp. 64–80. See also Sonnsjö, H. and Mobjörk, M., About indirect, complex and undesired events: analysing risks with great uncertainties (Swedish Defence Research Agency: Stockholm 2013) (in Swedish).

and researchers use different security concepts is not a problem in itself, but it accentuates the importance of paying attention to the definitions used. Due to the wide-ranging nature of security risks that can be considered in relation to climate change, we follow the approach taken in the fifth IPCC assessment report and employ a comprehensive understanding of security.[9] This approach builds on the human security approach but addresses also the interplay between different dimensions of security. The human security approach has special status, however, since any other dimension of security, such as state or international security, is likely to have negative effects on human security too. This is the foundation of a normative stance: any measures should not be taken at the expense of human security. Comprehensive security is thus broad enough to capture the different security risks posed by climate change, and gives a foundation for how to value different security approaches when they are in conflict with each other.

Climate-related change

Climate change is defined as 'a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persist for an extended period, typically decades or longer'.[10] In this report, we prefer to talk about climate-related environmental change, or *climate-related change*, which we define as 'a change in biophysical conditions that are or will be affected by a change in the state of the climate or by variations in the mean state of the climate'.[11] We employ this concept because the impacts of climate change on human societies are mediated by both climate and non-climatic factors such as social and political responses. Thus, climate-related change better reflects the kind of social and environmental changes that this report is focused on.

2.2. Thematic research areas

This section provides an overview of a number of thematic research areas that are part of the larger research field of climate-related security risks: water security; food security; sea level rise and coastal degradation; extreme weather events and weather-related disasters; climate-related migration; and violent conflict. These risks are joint challenges in six prominent reports that address a wide range of security risks posed by climate change.[12] We refer to the scientific and policy literature to describe the themes.

[9] Adger et al. (note 4); O'Brien, G. et al. (note 8); and Matthew, R. A., Barnett, J., McDonald, B. and O'Brien, K. L. (eds.), *Global Environmental Change and Human Security* (MIT Press: Cambridge, MASS, 2010). See also Mobjörk, M., Eriksson, M. and Carlsen H., *On Connecting Climate Change with Security and Armed Conflict: Investigating knowledge from the scientific community* (Swedish Defence Research Agency: Stockholm 2010).

[10] IPCC (note 7), p. 120.

[11] van Baalen and Mobjörk (note 1), p. 8.

[12] These reports include CNA Corporation, *National Security and the Threat of Climate Change* (CNA Corporation: Alexandria, Virginia, 2007); Schubert, R. et al., Climate Change as a Security Risk (German Advisory Council on Global Change: Berlin, 2007); Foresight, International Dimensions of Climate Change: Final Project Report (Government Office for Science: London, 2011); Steinbruner et al. (note 5); Peters, K.

The six thematic research areas examine various aspects of the linkages between climate change and security. As stressed above, the impacts of climate change depend on context-specific vulnerabilities, and these differ between and across geographical areas. It is therefore crucial to take into account the interplay between different climate-related impacts and non-climate factors, as well as the significant overlaps between the different themes. Water scarcity for instance also affects food security, and both can have implications for migration and violent conflict.

2.2.1. Water security

Access to water is an essential component of societal development and security, and is specifically addressed in goal six of the SDGs. The IPCC report notes that changes in precipitation will not be uniform across the world; while high latitudes are likely to experience increased mean precipitation, mid-latitude and subtropical dry regions are likely to see decreased mean precipitation. Mid-latitude and wet tropical regions are also very likely to experience more intense and more frequent extreme precipitation events. This means that 'the fractions of the global population that will experience water scarcity and be affected by major river floods are projected to increase with the level of warming in the 21st century'.[13]

Increased water stress will have severe security implications for humans living in regions already exposed to water shortages and those dependent on rain-fed agriculture in dry or semi-dry areas. Water stress is often seen as a severe threat to the livelihoods of marginalized groups, and thus as closely linked to human insecurity.[14] There is also concern that recent shifts in precipitation—and predicted future shifts—will increase competition over scarce water resources, both within and between states.[15] It is important to take into account the use of groundwater resources, since if they are used in a sustainable manner they can provide water during temporary periods of scarcity.[16] These resources, however, are often being used for short-term purposes that undermine their long-term sustainable use.

While the idea of water wars has received much media attention, research on trans-boundary water management has demonstrated that states tend to collaborate rather than enter into violent disputes over shared water.[17] There is widespread evidence of this, but several studies stress that this may not hold true in the

and Vivekananda, J., *Topic Guide: Conflict, Climate and the Environment* (International Alert: London, 2014); and Rüttinger, L. et al., *A New Climate for Peace* (Adelphi, International Alert, Woodrow Wilson International Center for Scholars, European Union Institute for Security Studies: Berlin, 2015).

[13] Pachuari, R. K. and L. A. Meyer (eds), *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (IPCC: Geneva, 2014).

[14] Zografos C., Goulden, M. C. and Kallis, G., 'Sources of human insecurity in the face of hydro-climatic change', *Global Environmental Change*, vol. 29 (2014), pp. 327–36.

[15] Rüttinger et al. (note 12); and Steinbruner et al. (note 5).

[16] Robins, N. S. and Fergusson, J., 'Groundwater scarcity and conflict: managing hotspots', *Earth Perspectives*, vol. 1, no. 6 (2014).

[17] Wolf, A. T., 'Shared waters: conflict and cooperation', *Annual Review of Environmental Resources*, vol. 32 (2007), pp. 241–69. See also Jägerskog A. et al. (eds), *Water Security, Volume II Water Security—International Conflict and Cooperation* (Sage: London, 2015).

future, given that water scarcity is expected to increase in volatile regions where institutions are weak.[18] Another conclusion from the trans-boundary water management literature is that even though shared waters between states rarely lead to regular war, conflicts over shared waters do lead to heightened communal tensions, threats and violence.[19] This highlights the fact that water scarcity may have different consequences depending on whether a water dispute arises at the international, national or community level. Thus far, scholars have demonstrated that water disputes have been particularly destabilizing at the community level.[20]

Above all, these studies highlight the fact that governance is a critical factor when it comes to reducing the negative impacts of water scarcity.[21] Enhancing institutional capacity in combination with transparent and efficient mechanisms for information sharing, participation and dispute settlement are often suggested to strengthen water cooperation in contexts of water scarcity.

2.2.2. Food security

According to the IPCC, 'all aspects of food security are potentially affected by climate change, including food access, utilization, and price stability'.[22] In addition, it is stated with high confidence that most developing countries will be negatively affected by lower yields from agricultural production in the future, although opinion differs with regard to the precise extent of the decrease. However, there is a fair degree of evidence that countries that already suffer from food scarcity will be the most severely affected, and food security will worsen over time.[23]

Agriculture is a large consumer of freshwater. Changes in the quantity and quality of freshwater therefore affect the agricultural production in a negative way. Africa is one of the continents that will be most adversely affected, but there will be significant differences across the continent. Central America, some areas of Brazil and Argentina, as well as parts of the Andean region, South Asia and Australia also face declines in crop productivity.[24] This is in contrast to some countries in the higher latitudes, such as Russia, northern Europe and Canada, which may experience positive impacts from global warming as the growing season becomes longer.[25] Distribution chains will therefore play a key role in counteracting food insecurity in the countries that will be negatively affected.

Given the trans-boundary nature of food supply chains, a decline in food production will not only have implications at the local or national level, but also affect

[18] Steinbruner et al. (note 5); Zografos et al. (note 14).

[19] Wolf (note 17).

[20] Raleigh, R. and Urdal, H., 'Climate change, environmental degradation and armed conflict', *Political Geography*, vol. 26 (2007), pp. 674–94.

[21] Schubert et al. (note 12); Foresight (note 12); and Steinbruner et al. (note 5).

[22] Porter, J.R. et al., 'Food security and food production systems', eds C. B. Field et al., *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge and New York: Cambridge University Press, 2014), pp. 485–533, p. 488.

[23] Wheeler, T. and von Braun, J., 'Climate change impacts on global food security', *Science*, vol. 341 (2013), pp. 508–13.

[24] Wheeler and von Braun (note 23).

[25] Porter et al. (note 22); and Wheeler and von Braun (note 23).

Box 2.2. Measures to reduce the risk of food insecurity

The impacts of climate change on food security encompass four major dimensions: production, distribution, access and utilization. Most of the research addresses food production, but some measures have been suggested in all dimensions to counteract food insecurity:

Improve access to relevant climate information for farmers, including on crop selection and storage facilities;

Secure land rights and tenure, and promote diversification of livelihoods;

Improve market access for small-scale farmers and develop insurance systems for them; and

Enable states and international organizations to maintain adequate food reserves and operating markets in case of food crises.

Sources: Ziervogel, G. and Ericksen, P. J., 'Adapting to climate change to sustain food security', *Wiley Interdisciplinary Reviews: Climate Change*, vol. 1, no. 4 (2010), pp. 525–40; and Rüttinger, L. et al., *A New Climate for Peace* (Adelphi, International Alert, Woodrow Wilson International Center for Scholars, European Union Institute for Security Studies: Berlin, 2015).

the availability and price of food in other regions of the world.[26] Volatile food prices would have severe impacts on import-dependent developing countries, while consumers in large industrialized countries would be relatively unaffected.[27] In addition, food insecurity and price volatility are often widespread in societies plagued by conflict.[28] As Wheeler and von Braun note: 'Food inequalities will increase, from local to global levels, because the degree of climate change and the extent of its effects on people will differ from one part of the world to another, from one community to the next, and between rural and urban areas'.[29]

There is evidence that climate change affects food prices and that higher food prices increase conflict risks.[30] Some studies emphasize that it is mostly urban groups exposed to temporary food insecurity that engage in food riots, while the most politically marginalized groups that might be exposed to long-term and even chronic food insecurity are less inclined to protest.[31] Other studies emphasize the risk of violent conflict when particular ethnic groups believe that they are being disproportionately affected by food insecurity, especially in contexts with a history of conflict.[32] However, it is important to recognize that the links between

[26] Peters and Vivekananda (note 12); and Ziervogel, G. and Ericksen, P. J., 'Adapting to climate change to sustain food security', *Wiley Interdisciplinary Reviews: Climate Change*, vol. 1, no. 4 (2010), pp. 525–40.

[27] King, D. et al., *Climate Change: A Risk Assessment* (Centre for Science and Policy, Cambridge University: Cambridge, 2015).

[28] Schubert el al. (note 12); Barrett, C.B., *Food Security and Sociopolitical Stability* (Oxford University Press: Oxford, 2013); and Raleigh, C., Choi, H. J. and Kniveton, D., 'The devil is in the details: an investigation of the relationships between conflict, food price and climate across Africa', *Global Environmental Change*, vol. 32 (2015), pp. 187–99.

[29] Wheeler and von Braun (note 23), p. 512.

[30] Raleigh et al. (note 28).

[31] Schubert et al. (note 12); Barrett (note 28).

[32] Rüttinger et al. (note 12).

climate change and food riots are mediated by a number of contextual factors, such as the level of urbanization and of poverty, the distribution of land and governance structures.[33] There is hence broad agreement in the literature that institutional factors play a key role in preventing social unrest and violent conflict.[34] In a similar way as with water security, strengthening governance structures will be fundamental. When governments are engaged in effective risk assessments, regulation and planning for food production and distribution both nationally and internationally, the security risk is generally reduced. Measures to reduce the risk of food security are further outlined in box 2.2.

2.2.3. Sea level rise and coastal degradation

Given the slow onset of sea level rise and the lack of historically equivalent events, sea level rise is an illustrative example of a field where the past may have low explanatory value when assessing future security impacts. It is also a good example of an issue where the uncertainty is so great that impact assessments are difficult to carry out.[35] Despite this uncertainty, the trajectory is well known and as much as 70 per cent of the world's coastline is expected to experience sea level rise, but the impact of this rise will differ substantially across regions.[36] In general, these differences reflect different countries' and regions' capacities to invest in the necessary protection and adaptive systems.[37]

Sea level rise increases the impact of storms, flooding, damage to infrastructure and degradation of coastal areas. Rising sea levels could have disruptive impacts on livelihoods in low-lying coastal areas, while low-lying islands in the Pacific Ocean, such as the Maldives, are threatened with complete inundation.[38] The risks posed by sea level rise to low-lying island and coastal areas are intricately linked with possible changes in the frequency and/or intensity of extreme weather events.[39]

These multiple sources of exposure also apply to many coastal cities, some of which are experiencing population growth.[40] King et al. identify 136 cities with a total population of 400 million people that are threatened by flooding to different degrees.[41] Cities such as Mumbai, Guangzhou, Guayaquil, Manila and Karachi, but also Miami and New York, are defined as high-risk. Port cities are also identified as particularly vulnerable for adverse impacts of sea-level rise and possible increased storm frequency on maritime transportation, and hence on trade

[33] Evans, A., *The Feeding of the Nine Billion: Global Food Security for the 21st Century* (Royal Institute of International Affairs, Chatham House: London, 2009); Peters and Vivekananda (note 12); and Rüttinger et al. (note 12).

[34] Barrett (note 28); Adger et al. (note 4); and Raleigh et al. (note 28).

[35] E.g. the estimates of sea level rise by 2100 range between 26–55 cm in the best-case scenario and 45–82 cm in the worst-case scenario. Pachauri and Meyer (note 13).

[36] Pachauri and Meyer (note 13).

[37] Rüttinger et al. (note 12).

[38] King et al. (note 27); and Rüttinger et al. (note 12).

[39] Foresight 2011 (note 12).

[40] Oppenheimer et al. (note 3).

[41] King (note 27).

routes.[42] As severe impacts of sea level rise will tend to be concentrated in specific geographical areas, there is an urgent need for long-term planning in order to identify the necessary adaptation measures to enable these countries and cities to cope with rising seas.[43] The importance of integrating climate change adaptation and disaster risk management is evident for many coastal areas since they face both long-term challenges because of sea level rise and rapid onset disasters due to extreme weather events.

Various studies emphasize the large-scale implications of sea level rise for human livelihood and point out that one consequence of coastal degradation and sea level rise will be forced migration.[44] Since sea level rise may change territorial boundaries and economic zones, disputes over national boundaries are also feared.[45] The United Nations Convention on the Law of the Sea (UNCLOS), which defines the boundaries of national territorial waters, has not yet taken into account changing coastlines. The existence of robust systems for settling disputes between countries is therefore considered important for preventing tensions and potential conflicts between states.

Two important aspects determine the security implications of sea level rise: adaptive capacity, and the magnitude and speed of the sea level rise.[46] In order to promote resilient communities in a context of rising sea levels, Rüttinger et al. emphasize the importance of reducing the vulnerability of affected populations by for instance stronger social security schemes, investment in new economic activities, improving local livelihoods and strengthening the resilience of infrastructure.[47] Overall, as there is solid evidence for which geographical areas will be particularly affected by sea level rise, it is essential to support these societies to cope with this change through long-term planning and adaptation measures.

2.2.4. Extreme weather events and weather-related disasters

The IPCC special report on extreme events and disasters concluded that a changing climate is leading to 'changes in the frequency, intensity, spatial extent, duration, and timing of extreme weather and climate events, and can result in unprecedented extreme weather and climate events'.[48] The impacts of these extremes 'reveal significant vulnerability and exposure of some ecosystems and

[42] Foresight 2011 (note 12); and Hanson, S. et al., 'A global ranking of port cities with high exposure to climate extremes', *Climatic Change*, vol. 104, no. 1 (Jan. 2011), pp. 89–111.

[43] Brecht, H. et al., 'Sea-level rise and storm surges: high stakes for a small number of developing countries', *Journal of Environment & Development*, vol. 21, no. 1 (2012), pp. 120–38; and Hallegatte, S. et al., 'Future flood losses in major coastal cities', *Nature Climate Change*, vol. 3, no. 9 (2013), pp. 802–06.

[44] Rüttinger et al. (note 12); and Schubert el al. (note 12).

[45] Lally, M., *Spratly Islands Strategic Importance and Rising Sea Levels*, International Conflict and Environment Case Studies, no. 226 (2010); and Lusthaus, J., 'Shifting sands: sea level rise, maritime boundaries and inter-state conflict', *Politics*, vol. 30 (2010), pp. 113–18.

[46] King et al. (note 27); and Rüttinger et al. (note 12).

[47] Rüttinger et al. (note 12), p. 62.

[48] Intergovernmental Panel on Climate Change (IPCC), 'Summary for Policymakers', eds C.B. Field et al., *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation*, Special Report by Working Groups I and II of the Intergovernmental Panel on Climate Change (Cambridge University Press: Cambridge and New York, 2012), p. 5.

many human systems to current climate variability'.[49] It is the already vulnerable populations that are particularly sensitive to extreme weather events.[50]

Scholars generally distinguish between slow-onset disasters and sudden shocks. While certain disasters, such as droughts and sea level rise, occur slowly over years or decades, others, such as cyclones and wildfires, occur suddenly and have immediate consequences. Given their different temporal dimensions, these types of disaster pose different security challenges and require tailored response strategies.[51]

Several reports cover the relationship between extreme weather events and violent conflict onset or dynamics.[52] Any direct association, however, is still contentious.[53] Like the case of water scarcity, extreme weather events have been found to both exacerbate existing violent conflicts and foster peace or de-escalation.[54] Harris et al. highlight how existing grievances can deepen in the aftermath of natural disasters, because of the disaster itself and how governments distribute relief measures and humanitarian assistance to the population.[55] Disasters are particularly destabilizing for societies when the distribution of post-disaster humanitarian assistance is perceived to be unequal, by excluding marginalized populations in favour of the needs of the elite.[56] At the same time, conflict and fragility in turn aggravate the impact of natural disasters, which points to a mutually reinforcing relationship between disasters, conflict and fragility.

In order to limit the impact of natural disasters, including potential political consequences, most reports stress the need to include risk awareness and risk reduction strategies in development and security policy.[57] In general, disaster management needs to move beyond the construction of defensive infrastructure to improve societal preparedness and prevention capacity. Although exactly how is still unclear, disaster risk management must be integrated with peacebuilding measures—in order to counteract societal tensions and potential violence—and with climate change adaptation.[58] Rüttinger et al. note that when disaster management is effective and cooperative, it can provide an opportunity for peace by fostering solidarity and cooperation, and bridge deeply rooted political cleavages.[59]

[49] Pachauri and Meyer (note 13), p. 53

[50] Adger et al. (note 4).

[51] IPCC (note 48)

[52] Steinbruner et al. (note 5); Peters and Vivekananda (note 12); Rüttinger et al. (note 12).

[53] Adger et al. (note 4).

[54] Harris, K., Keen, D. and Mitchell, T., *When Disasters and Conflicts Collide: Improving Links Between Disaster Resilience and Conflict Prevention* (Overseas Development Institute: London, 2013); and Walch, C., 'Conflict in the eye of the storm: micro-dynamics of natural disasters, cooperation and armed conflict', doctoral dissertation, Department of Peace and Conflict Research, Uppsala University, 2016.

[55] Harris et al. (note 54).

[56] Rüttinger et al. (note 12).

[57] Harris et al. (note 54); and Rüttinger et al. (note 12).

[58] Schubert el al. (note 12); Walch (note 54); and Birkmann , J. and von Teichman, K., 'Integrating disaster risk reduction and climate change adaptation: key challenges, scales, knowledge, and norms', *Sustainability Science*, vol. 5, no. 2 (2010), pp. 171–84.

[59] Rüttinger et al. (note 12).

2.2.5. Climate-related migration

Migration caused by climate change is frequently mentioned in the policy literature on climate change but it is an issue that is also heavily contested.[60] In its most recent assessment report, the IPCC concludes that: 'Some migration flows are sensitive to changes in resource availability and ecosystem services. Major extreme weather events have in the past led to significant population displacement, and changes in the incidence of extreme events will amplify the challenges and risks of such displacement'.[61] Moreover, the IPCC concludes that 'climate change will have significant impacts on forms of migration that compromise human security'.[62] Hence, the dispute over the potential security implications of migration posed by climate change does not concern human security, but whether climate-related migration also involves state-based security risks.[63] In order to shed some light on this issue, it is first necessary to consider some basic insights on migration.

Migration is often described in relation to different forms or patterns: international versus national; permanent, circular or temporary; and voluntary versus forced.[64] Climate change and climate variability seem to affect these patterns in different ways.[65] Sea level rise, which make living spaces uninhabitable, obviously causes permanent migration—the land is no longer there—while extreme weather events involve more temporary movements within the region. Circular movements seem to coincide with drought. However, extreme weather events can also influence permanent migration. Locations at high risk of extreme weather events could eventually be partly or entirely abandoned, which could exacerbate the large migration movements that are already taking place, in particular migration from rural to urban areas.

While it is possible to identify various forms of migration pattern relating to different climate impacts, it is not possible to make predictions from one specific form of altered climate condition about the character or level of migratory movement. This is due to the web of interacting factors that needs to be taken into consideration to explain migratory movements.[66] However, several of the drivers of migration, such as environmental, social and economic conditions, are affected by climate change. The concept of forced migration has been used by some policy

[60] CNA Corporation (note 12); Schubert el al. (note 12); Steinbruner et al. (note 5); Peters and Vivekananda (note 12); and Rüttinger et al. (note 12).

[61] Adger et al. (note 4), p. 758.

[62] Adger et al. (note 4), p. 758.

[63] Foresight, *Foresight: Migration and Global Environmental Change, Final Project Report* (Government Office for Science: London, 2011); Mobjörk, M. and L. Simonsson, L., *Climate Change, Migration and Conflicts: Connections and Projections* (Swedish Defence Research Agency (FOI): Stockholm, 2011) (in Swedish).

[64] Laczko, F. and Aghazarm, C., *Migration, Environment and Climate Change: Assessing the Evidence* (International Organization for Migration (IOM): Geneva, 2009); Foresight (note 63); and Steinbruner et al. (note 12).

[65] Raleigh, J. and Jordan, L., 'Climate change and migration: emerging patterns in the developing world', eds R. Mearns and A. Norton, *Social Dimension of Climate Change: Equity and Vulnerability in a Warming World* (World Bank: Washington, DC, 2010); and Foresight (note 63).

[66] Steinbruner et al. (note 5); and Foresight (note 63).

actors to highlight the role of deteriorating conditions for people's livelihoods.[67] However, even under worsened environmental or climate conditions, not everyone moves, which indicates that there is no simple correlation between a degenerated environment—or livelihood—and migration. Thus, security risk in relation to migration should focus not only on the migrants and the destination area, but also on those who, for different reasons, are left behind. As Steinbruner et al. point out, for these 'trapped populations'—often the poorest of the poor—both slow-onset and rapid-onset disasters can result in humanitarian catastrophes.[68]

Analyses of the security risks linked to different patterns of climate-related migration show the need to pay careful attention to how the security of different groups is affected. In addition to those who are left behind, who are undoubtedly in a very risky position, those who migrate are likely to face different kinds of security challenges at their new destination. Rural migrants who settle in urban areas, for example, often end up in risk-prone areas.[69] Both these security challenges clearly relate to human security. Turning to the link between climate-related migration and state-based approaches to security, research findings are weak. There is generally little evidence that large-scale migration has been a cause of conflict in the past.[70] Where it has, the migration has occurred in already conflict-prone areas.[71]

Large-scale, particularly unplanned, migratory movements certainly affect societies, including wealthy and stable societies. From a security point of view, however, it is primarily the migrants who face the security risks. Schubert et al. note that rapid changes challenge societal systems, and can increase tensions and inequalities.[72] Nonetheless, these tensions should not be conflated with something that *threatens* a state's security. It is important to acknowledge the connotations of how societal change is labelled: talking about migrants—irrespective of their reasons for migrating—in terms of security threats is morally dubious. When migrants are conceptualized in terms of security threats certain policy measures may be legitimized. Such policies, which are characterized by building or strengthening borders, have huge implications for the security of migrants, since migration becomes illegal, irregular, unsafe and exploitable movement. This in turn heightens the security risks for those who migrate.[73]

[67] United Nations Development Programme, *Human Development Report 2007/2008: Fighting Climate Change, Human Solidarity in a Divided World* (Palgrave Macmillan: New York, 2007); and Laczko, F. and Aghazarm, C., *Migration, Environment and Climate Change: Assessing the Evidence* (International Organization for Migration: Geneva, 2009).

[68] Steinbruner et al. (note 5).

[69] Foresight (note 63).

[70] Schubert el al. (note 12); and Peters and Vivekananda (note 12).

[71] Reuveny, R., 'Climate change-induced migration and violent conflict', *Political Geography*, vol. 26 (2007), pp. 656–73; and Brzoska, M. and Fröhlich, C., 'Climate change, migration and violent conflict: vulnerabilities, pathways and adaptation strategies', *Migration and Development*, vol. 5, no. 2 (2016), pp. 1–21.

[72] Schubert et al. (note 12).

[73] Welzer, H., Klimakrieg. Wofür im 21. Jahrhundert götet wird [Climate Wars: What People Will be Killed for in the 21st Century] (Daidalos: Göteborg, 2008) (in Swedish); and Rüttinger et al. (note 12).

Box 2.3. Definitions of violent conflict

Definitions of violent conflict commonly vary depending on intensity, the level of organization, and the type of actor and incompatibility. The Uppsala Conflict Data Programme (UCDP) defines *armed conflict* as 'a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths in one calendar year'. A conflict in which both parties are states is referred to as an *inter-state conflict*, whereas a conflict where none of the parties is a government is referred to as a *non-state armed conflict*. In addition, analysts also speak of *communal conflicts*, which are violent conflicts between semi-organized non-state groups that are organized along some communal identity, such as religious communities, pastoralist groups or clans. In this report, we use the umbrella term *violent conflict* when referring to all different types of conflict except inter-state conflict.

Sources: Uppsala Conflict Data Programme (UCDP), 'Definitions', Department of Peace and Conflict Research, Uppsala University, Sweden, 2015; and Elfversson, E., 'Providing security or protecting interests? Government interventions in violent communal conflicts in Africa', *Journal of Peace Research*, vol. 52, no. 6 (2015), pp. 791–805.

The bulk of the literature dealing with the intersection between climate change, migration and security highlights the need for preventive action.[74] Reducing vulnerability and strengthening adaptive capacity are critical to increasing human security. As the fifth IPCC assessment report notes, migration is an important adaptation strategy that might be appropriate in some areas, and should therefore be facilitated.[75]

2.2.6. Violent conflict

Conflict is an essential part of human interaction and a fundamental component of social change and the democratic process—democracy itself is commonly understood as the institutionalization of conflict. A conflict that turns violent, however, is negative for the security of states, communities and humans. The idea of 'climate wars' has received considerable media attention and many studies link the impacts of climate change with increased risk of violent conflict.[76] Climate change is often described as a 'threat multiplier' exacerbating existing trends, tensions and instability.[77]

A large body of scientific research in the past decade has examined how climate change affects the risk of violent conflict. Some of this research explores direct associations between climate variables and the outcome of violent conflict,

[74] Steinbruner et al. (note 5); Peters and Vivekanda (note 12); and Rüttinger et al. (note 12).

[75] Adger et al. (note 4).

[76] Schubert (note 12); Rüttinger et al. (note 12); and Peters and Vivekananda (note 12).

[77] CNA (note 12); European Commission, Climate Change and International Security. Paper from the High Representative Javier Solana and the European Commission to the European Council, 2008, S113/08; Quadrennial Defense Review Report (Washington: Secretary of Defense, 2010); and Rüttinger et al. (note 12).

while some focuses on how climate change and variability affect other factors that are known to increase the risk of violent conflict.[78] A direct link between climate change and violent conflict is contested.[79] There is agreement, however, regarding the existence of indirect links.[80] In probing more deeply into these findings, it is important to be aware of the different definitions of violent conflict that are used (see box 2.3).

On any *direct relationship* between climate change and violent conflict, most researchers have concluded that the relationship is either weak or cannot be established with statistical significance.[81] This conclusion is echoed in the IPCC assessment report, which states that 'collectively the research does not conclude that there is a strong positive relationship between warming and armed conflict'.[82] To a large degree, meta-studies on a direct link between climate change focus on quantitative studies examining certain types of violent conflict, predominantly the risk of high-intense conflicts such as civil war or armed conflict; and certain forms of climate impacts, most notably changes in rainfall and temperature variability.[83]

Studies that focus on less organized forms of violent conflict suggest that communal conflict is a more plausible outcome of environmental degradation than large-scale violence between or within states.[84] Several studies show how competition over scarce resources primarily reinforces low-intensity and long-lasting conflicts. This should be expected to be valid also for climate-related violent conflicts.[85] The IPCC report concludes that there is some agreement that changes in rainfall patterns increase the risk of communal conflict in resource-dependent economies, particularly in pastoral societies in Africa.[86]

The *indirect link between* climate change and violent conflict is less contested. Researchers have found that climate-related change has an impact on previously known drivers of civil war and armed conflict, such as low per capita economic

[78] Adger et al. (note 4).

[79] Hsiang, S. M., Burke, M and Miguel, E., 'Quantifying the influence of climate on human conflict', *Science* 341 (2013); and Buhaug, H. et al., 'One effect to rule them all? A comment on climate and conflict', *Climatic Change*, vol. 127, no. 3–4 (2014), pp. 391–97.

[80] Adger et al. (note 4); Gemenne F. et al., 'Climate and security: evidence, emerging risks and a new agenda', *Climatic Change*, vol. 123, no. 1 (2014), pp. 1–9; and Rüttinger et al. (note 12).

[81] Bernauer, T., Böhmelt, T. and Koubi, V., 'Environmental changes and violent conflict', *Environmental Research Letters*, vol. 7, no. 1 (2012), pp. 1–8; Scheffran J. et al., 'Disentangling the climate-conflict nexus: empirical and theoretical assessment of vulnerabilities and pathways', *Review of European Studies*, vol. 4, no. 5 (2012); and Theisen, O. M., Gleditsch, N. P. and Buhaug, H., 'Is climate change a driver of armed conflict?', *Climatic Change*, vol. 117, no. 3 (2013), pp. 613–25.

[82] Adger et al. (note 4), p. 772.

[83] Gleditsch, N. P., 'Whither the weather? Climate change and conflict', *Journal of Peace Research*, vol. 49, no. 1 (2012), pp. 3–9; Ide, T. and Scheffran, J., 'On climate, conflict and cumulation: suggestions for integrative cumulation of knowledge in the research on climate change and violent conflict', *Global Change, Peace & Security*, vol. 26, no. 3 (2014), pp. 263–79; and Buhaug, H. (2015). Climate-conflict research: some reflections on the way forward, *WIREs Climate Change*, vol. 6, pp. 269–75.

[84] Buhaug (note 83).

[85] Bernauer et al. (note 81); Hendrix, C.S. and Salehyan, I., 'Climate change, rainfall, and social conflict in Africa'. *Journal of Peace Research*, vol. 49, no. 1 (2012), pp. 35–50; and Scheffran et al. (note 81).

[86] Adger et al. (note 4).

growth and weak state institutions.[87] This accentuates the importance of examining how, and under what circumstances, climate change increases the risk of violent conflict. As concluded by Salehyan, 'the discussion is no longer about whether or not the climate influences conflict, but about when and how it does so'.[88]

The absence of evidence for a direct link between climate change and violent conflict highlights the importance of focusing on mediating factors that reduce the risk of climate-related conflicts turning violent. Conflicts are seldom, if ever, caused by a single factor, but dependent on a web of interrelated mechanisms, resulting in a need to understand when and why different groups decide to resort to violence.[89] The different pathways that link climate-related change to an increased risk of violence are discussed in more detail in the following section.

2.3. The climate-conflict link: the case of East Africa

This section focuses on one of the six specific climate-related security risks introduced above, violent conflict, in one specific geographical region, East Africa. A focus on a specific region can help contextualize the relationship and arrive at a more thorough understanding of the specific climate-related security risks. This approach contributes with theory-driven explanations of the linkage, which hence also generates findings that apply beyond the specific case and inform research and policy on other regions affected by similar risks and which are characterized by comparable local conditions.

More specifically, this section examines the pathways from climate-related change to violent conflict.[90] This means a focus on *how* climate change increases the risk of violent conflict, rather than *whether* it does so. We approached the subject matter by reviewing 44 scientific articles, both quantitative and qualitative, that examine the relationship between climate-related change and violent conflict in East Africa. Some of the thematic areas investigated above are also addressed in the analysis below, in relation to the specific context of East Africa. Our study is distinguished from previous meta-analyses and reviews in that it examines both quantitative and qualitative studies.[91] The core findings of this analysis are set out below.[92]

[87] Bergholt, D. and Lujala, P., 'Climate-related natural disasters, economic growth, and armed civil conflict', *Journal of Peace Research*, vol. 49, no. 1 (2012), pp. 147–62; Koubi, V. et al., 'Do natural resources matter for interstate and intrastate armed conflict?', *Journal of Peace Research*, vol. 51, no. 2 (2014), pp. 227–43; and Adger et al. (note 4).

[88] Salehyan, I., 'Climate change and conflict: making sense of disparate findings', *Political Geography*, vol. 43 (2014), pp. 1–5, p. 1.

[89] Welzer (note 73); and Trombetta, M. J., 'Environmental security and climate change: analysing the discourse', ed. P. G. Harris, *The Politics of Climate Change: Environmental Dynamics in International Affairs* (Routledge: London, 2009).

[90] The term violent conflict is used as an umbrella term for all the different types of armed conflict outlined in Box 2.2, excluding inter-state conflict. We define violent conflict as 'deliberate violent acts perpetrated by a government or organized or semi-organized group against state forces, other organized or semi-organized groups or civilians'. van Baalen and Mobjörk (note 1), p. 8.

[91] Hsiang et al. (note 79); Theisen et al. (note 81); and Koubi et al. (note 87).

[92] This section builds on van Baalen and Mobjörk (note 1). For more information on the methodological and analytical approach taken, as well as more extensive references, see that report.

2.3.1. Pathways from climate-related change to violent conflict

A large body of scholarly literature on climate-related change and violent conflict in East Africa shows that changing rainfall patterns, drought, changes in vegetation cover and increasing resource scarcity have contributed to various types of violent conflict.[93] The link is particularly evident for conflicts involving livestock herders or pastoralists. Case study research also shows that these local resource conflicts are sometimes drawn into more intense power struggles related to civil war, for example, in Sudan, South Sudan and Somalia. This does not mean that climate-related change automatically causes violent conflict—the political, social and economic context is often key. Five explanations for why, how and when climate-related change increases the risk of violent conflict in East Africa are briefly outlined below, as well as a number of important contextual factors.

WORSENING LIVELIHOOD CONDITIONS

Economic hardship can significantly increase the risk of violent conflict under certain circumstances, and has been found to do so across East Africa. Drought, dwindling rainfall, degraded soils and reduced vegetation cover can have devastating effects on livelihood conditions in this region, where a large proportion of the population relies on rain-fed agriculture and pasture. With their livelihoods threatened, people sometimes believe that they have less to lose from using violence or joining armed groups. For example, Maystadt and Ecker show that violent conflict is more likely following high temperatures and drought in Somalia, as these climate-related changes cause economic losses in the livestock sector, and in turn lower the costs of violence.[94] Sudden climate-related changes, such as a drought or flood, may be more detrimental because people have less time to adapt or to develop peaceful resource-sharing mechanisms.

Several studies have shown that periods of relatively unfavourable conditions, such as droughts, are more likely to lead to communal conflict or civil war.[95] When violent conflict leads to a breakdown in social relations and forces people to adopt unsustainable livelihoods, there is a risk that the livelihoods-conflict cycle will be perpetuated, leading to chronic insecurity. Such is the case for example in Sudan, South Sudan and Somalia, where livelihood insecurity and violent conflict have become endemic. These findings suggest that efforts to mitigate the impact of climate-related change, and to strengthen resilience to climate change, may also reduce the risk of violent conflict.

[93] van Baalen and Mobjörk (note 1).

[94] Maystadt, J. F. and Ecker, O., 'Extreme weather and civil war: does drought fuel conflict in Somalia through livestock price shocks?', *American Journal of Agricultural Economics*, vol. 96, no. 4 (2014), pp. 1157–82.

[95] Ember, C. R., Adem, T. A. and Skoggard, I., 'Risk, uncertainty, and violence in Eastern Africa', *Human Nature*, vol. 24, no. 1 (2013), pp. 33–58; O'Loughlin, J. et al., 'Climate variability and conflict risk in East Africa, 1990–2009', *Proceedings of the National Academy of Sciences*, vol. 109, no. 45 (2012), pp. 18344–49; and Raleigh, C. and Kniveton, D., 'Come rain or shine: an analysis of conflict and climate variability in East Africa', *Journal of Peace Research*, vol. 49, no. 1 (2012), pp. 51–64.

INCREASING MIGRATION

As the previous section 2.2.5 on climate-related migration showed, the link between migration and violent conflict is contested. However, in areas of high inward migration in East Africa, regional migration sometimes leads to violent struggles over natural resources, or so-called 'sons of the soil' conflicts. When people can no longer sustain themselves, they often respond by moving to areas where there are more resources available. Migration sometimes leads to violence because groups from different areas often lack common conflict resolution mechanisms to peacefully resolve conflicts over resources. Groups with a strong sense of identity are also generally better at mobilizing people for violent purposes. This relationship has been found in Darfur, for example, where areas that experienced positive vegetation growth between 1982–2002 also saw higher levels of inward migration and, as a consequence, more violence between Arab and non-Arab groups.[96]

Importantly, the migration-related conflict identified in East Africa is more likely to take place in areas where there are more resources and where livelihood conditions are better. It is also important to keep in mind that the decision to migrate is rarely caused by environmental change alone, but is often a result of several factors (often political) that interact over time. Essentially, migration is just another adaptation strategy linked to deteriorating livelihood conditions. This highlights the importance of focusing on how to facilitate peaceful interactions between migrants and locals, rather than viewing migration merely as a potential cause of violence and therefore undesirable.

CHANGING PASTORAL MOBILITY PATTERNS

A slightly different form of migration is linked to changes to pastoral mobility patterns, that is, when pastoral groups move beyond their traditional herding grounds. Pastoralists earn their livelihood mainly by herding livestock and thus rely on mobility as a way of coping with the harsh climate conditions in East Africa. It is therefore not migration per se that is important, but the fact that pastoralists are increasingly being forced to change their normal mobility patterns. These changes are imposed by climate-related change and by non-climate factors, such as the expansion of mechanized agriculture.

The dominant climate-related factor in East Africa is drought. Along their traditional trekking routes, pastoralists negotiate access and follow customary laws that regulate their access to resources. When their routes change, conflicts often arise over water and pasture with groups already present in the area—conflicts that sometimes turn violent. This pattern has been observed across the region, particularly in Kenya, Ethiopia, Sudan and South Sudan. For example, violent conflict between the Afar and Karrayyus in Ethiopia has an important climatic

[96] De Juan, A., 'Long-term environmental change and geographical patterns of violence in Darfur, 2003–2005', *Political Geography*, vol. 45 (2015), pp. 22–33.

dimension, as resource scarcity has pushed the Karrayyus to cross further into Afar territory than before.[97]

As with migration, changing their mobility patterns is ultimately a survival strategy for pastoralist groups faced with livelihood insecurity. Thus, several authors suggest that policymakers must recognize the importance of mobile livelihood strategies and therefore focus on harmonizing the mobility needs of pastoralists with the needs of sedentary farmers.[98] Among the concrete measures proposed in the literature are, for example, efforts to combat bush encroachment on pasture or to control infectious insects, and schemes for providing cheap and accessible veterinary services and insurance systems for climate-sensitive sources of income such as livestock rearing.[99]

TACTICAL CONSIDERATIONS BY ARMED GROUPS

Weather conditions and climate variability also affect the tactical considerations of armed groups, most notably livestock raiders. Livestock raiding is less costly during the wet season, when the thick vegetation provides cover. Animals are also stronger during the wet season, making it easier for raiders to trek long distances with stolen livestock. Several studies show that livestock-related violence is more likely to occur during wet periods.[100] For example, in Kenya's Marsabit/Moyale district, the number of livestock raiding-related deaths increases threefold during the rainy season.[101] This explanation differs from the previous three explanations, since it concerns how the climate affects the decision on *when* to engage in violence, and not on *why* groups wish to engage in violence in the first place. Both scholars and policymakers should therefore be careful about comparing these studies with those that focus on the cause of violence or to view them as a rejection of a climate-conflict link in East Africa. What this strand of literature does, however, is illustrate how climate-related changes also affect the dynamics of violent conflict and the opportunity to engage in violence.

ELITE EXPLOITATION OF LOCAL GRIEVANCES

Most resource-related violent conflicts in East Africa are relatively low-intensity conflicts among loosely organized groups at the local level. However, through elite exploitation these local conflicts sometimes become entangled with the larger

[97] Hundie, B., 'Conflicts between Afar Pastoralists and their neighbors: triggers and motivations', *International Journal of Conflict and Violence*, vol. 4, no. 1 (2010), pp. 134–48.

[98] Chavunduka, C. and Bromley, D. W., 'Climate, carbon, civil war and flexible boundaries: Sudan's contested landscape', *Land Use Policy*, vol. 28, no. 4 (2011), pp. 907–16; Scheffran, J., Ide, T. and Schilling, J., 'Violent climate or climate of violence? Concepts and relations with focus on Kenya and Sudan', *International Journal of Human Rights*, vol. 18, no. 3 (2014), pp. 369–90; and Maystadt, J. F., Calderone, M. and You, L., 'Local warming and violent conflict in North and South Sudan', *Journal of Economic Geography*, vol. 15, no. 3 (2015), pp. 649–71.

[99] van Baalen and Mobjörk (note 1).

[100] Witsenburg, K. M. and Adano, W. R., 'Of rain and raids: violent livestock raiding in northern Kenya', *Civil Wars*, vol. 11, no. 4 (2009), pp. 514–38; Raleigh and Kniveton (note 95); and Theisen, O. M., 'Climate clashes? Weather variability, land pressure, and organized violence in Kenya, 1989–2004', *Journal of Peace Research*, vol. 49, no. 1 (2012), pp. 81–96.

[101] Witsenburg and Adano (note 100).

Box 2.4. Resource scarcity and elite manipulation in Sudan

The different types of pathways from climate-related change to violent conflict in East Africa are only separable in theory. These different processes often occur in parallel. The Rezaigat camel nomads in Darfur are a good example. While they historically cooperated with farmers in the area, they became increasingly hostile to their neighbours following recurring droughts in the 1970s and 1980s. When civil war broke out in Darfur the Khartoum government formed an alliance with the Rezaigat against the rebellious Fur and Masalit communities in southern Sudan. This led the Rezaigat to join the government-sponsored Janjaweed militia, perpetrators of atrocities, acts of genocide and crimes against humanity.

Sources: Suliman, M., 'Civil war in Sudan: the impact of ecological degradation', *Contributions in Black Studies*, vol. 15, no. 1 (1997), pp. 99–121; and Mohammed, A., 'The Rezaigat camel nomads of the Darfur region of Western Sudan: from cooperation to confrontation', *Nomadic Peoples*, vol. 8, no. 2 (2004), pp. 230–40.

processes of civil war, ethnic cleansing and insecurity. Political elites sometimes view fuelling inter-group violence as an effective means of diverting attention away from their own shortcomings, crushing political opponents or ensuring the continued support of their constituencies. In such situations, local struggles over scarce resources are ripe for elite exploitation, since elites can capitalize on existing grievances and tensions, and because the organizational structures necessary for violence are already present. This is particularly apparent in Sudan and South Sudan, where local resource conflicts are intrinsically linked to regional and national power struggles (see box 2.4). Similar processes have also been observed in Kenya, Ethiopia, Uganda and Rwanda. In Kenya, for example, the Moi regime sought to discredit the push for democratization in the early 1990s by orchestrating ethnic violence between pastoral groups and farmers, a political manipulation made possible by existing resource-related grievances.[102]

2.3.2. Beyond East Africa

What can be learned about the general relationship between climate-related change and violent conflict by studying East Africa? This section briefly outlines how two prominent dimensions of studying climate-related change and violent conflict in East Africa can inform the wider scholarly and policy dialogue. These are generic in character and ought to be relevant for analysing the link between climate-related change and increased risk of violent conflict.

THE POLITICAL AND SOCIAL CONTEXT

Studying East Africa shows that the relationship between climate-related change and violent conflict does not exist in a political or social vacuum. Political processes permeate every link in the chain from climate-related change to an increased risk

[102] Kahl, C. H., 'Population growth, environmental degradation, and state-sponsored violence: the case of Kenya, 1991–93', *International Security*, vol. 23, no. 2 (1998), pp. 80–119.

Box 2.5. The importance of time and space in Darfur

De Juan's study on the links between climate change, migration and violent conflict in Darfur is a good example of the benefits of studying the relationship over a longer time period and across spatial units. His analysis shows that between 1982 and 2002, some areas of Darfur experienced positive vegetation change while others experienced negative vegetation change. The changes were strongly associated with population movements. During the same period, people in Darfur moved from areas that were negatively affected by vegetation change to areas that were positively affected. De Juan proposed that the areas that experienced high levels of in-migration were also more likely to experience violent conflict in 2003 and 2005. His analysis clearly showed the dynamic interplay between time and space: environmental degradation does not necessarily increase the risk of violent conflict in the affected area, but can lead to increased pressure in less affected areas.

Source: De Juan, A., 'Long-term environmental change and geographical patterns of violence in Darfur, 2003–2005', *Political Geography*, vol. 45 (2015), pp. 22–33.

of violent conflict. A group's access to natural resources or vulnerability to climate change is determined by both political and social processes as well as biophysical conditions. Political institutions are often critical to understanding why some local resource conflicts turn violent, while most do not. Our analysis of the case study literature provides many examples of this. One example concerns East African pastoralists, who face increasing resource scarcity as a result of long-standing political, social and economic marginalization, in combination with more frequent and longer droughts. Pastoralism has long been seen as an out-dated and ecologically damaging practice by the region's elites; and regional governments have often sought to settle pastoralist groups by force.[103] Political processes, such as the closing of national and sub-national borders, damaging agricultural practices, and changes in traditional land ownership, have further intensified resource conflicts all across the region.

Acknowledging, therefore, the political and social conditions in the risks climate-related change pose for violent conflict is important since it highlights the room for political manoeuvre that exists to reduce vulnerability and prevent or resolve violent conflicts. As the overview of thematic areas in section 2.2 shows, the capacity or willingness of the government to play a mediating role is a general feature in reducing insecurity and reducing the risk of violent conflict.

TEMPORAL AND SPATIAL DIMENSIONS

The review of the literature on East Africa also shows how important it is for researchers to consider the temporal and spatial dimensions of their analyses of climate-related change and violent conflict (see the example in box 2.5). Some components of climate change, such as rising average surface temperatures, take years or even decades to affect communities, whereas others, such as extreme

[103] Leff, J., 'Pastoralists at war: violence and security in the Kenya-Sudan-Uganda border region', *International Journal of Conflict and Violence*, vol. 3, no. 2 (2009), pp. 188–203; Butler, C. K. and Gates, S., 'African range wars: climate, conflict, and property rights', *Journal of Peace Research*, vol. 49, no. 1 (2012), pp. 23–34; and Inselman, A. D., 'Environmental degradation and conflict in Karamoja, Uganda: the decline of a pastoral society', *International Journal of Global Environmental Issues*, vol. 3, no. 2 (2003), pp. 168–87.

weather events, materialize in a few days. In addition, both climate change and violent conflict have different implications across space depending on local environmental, social and political conditions. This multitude of nuances poses significant challenges. Many studies employ short time periods or limited spatial units. This may in consequence lead to the complex relations that shape the relationship between climate-related change and violent conflict—which also involves delayed effects and how effects are transmitted over geographical units—being overlooked. We therefore believe that it is essential for future research to address these dimensions in their design and analyses.

2.4. Concluding remarks

This chapter has focused on six thematic areas where climate-related change is linked to security risks. In-depth analysis has probed deeper into the pathways linking climate impacts with violent conflict. This section highlights four conclusions that span these areas. They stress the need to pay attention to: (*a*) governance and adaptive capacity; (*b*) the interplay between various risks; (*c*) how risks are transmitted across time and space; and (*d*) whose security is concerned.

2.4.1. Governance and adaptive capacity are decisive for risk impacts

The analysis of the thematic areas highlights the importance of *governance structures and adaptive capacity*. Research on trans-boundary water management, food security and weather-related disasters, for instance, clearly demonstrates that the same pressures can affect societies differently. Some societies have the capacity to adapt to significant levels of stress, while others will suffer severely negative impacts from the same kinds of stress. The importance of governance structures and adaptive capacity also explains why studies focused on a direct link between a specific climate variable, such as precipitation, and a specific negative security outcome can result in contrasting findings. Greater effort is therefore needed to understand how governance structures and adaptive capacity could be strengthened in different societal contexts. Improving our understanding of this will be pivotal to informing better responses that can reduce climate-related insecurities.

2.4.2. The interplay between various risks requires integrated responses

The above analysis illustrates how different security risks posed by climate change interact with each other and therefore require *integrated responses*. Increased water stress also affects food insecurity, and extreme weather events put additional stress on areas facing sea level rise. While these kinds of interactions have always existed, they are likely to be intensified as a consequence of a changing climate. It is therefore necessary for policymakers and scholars alike to pay careful attention to how these interactions affect a given thematic issue or geographical area. Furthermore, it is essential to reflect on how the security approach adopted within a certain policy community could come at the cost of other forms of insecurity. Integrated responses do not mean that every thematic area should be addressed at the same time. However, within a certain actor's mandate and

issue-area, it is necessary to reflect on what other risks need to be addressed in order to improve the risk analysis and develop proper responses, that is, measures that strengthen resilience and adaptive capacity and reduce negative side-effects.

2.4.3. Climate risks are transmitted across time and space

The analysis has also shown that climate-related security risks *are transmitted across time and space*. More concretely, in terms of the time dimension this means that some climate risks (extreme weather events) occur rapidly while others, such as sea level rise, develop over long periods of time. In terms of space, this means that societies could be heavily affected by impacts that occur in distant locations. A drought in one location could for instance result in rapidly increasing food prices elsewhere. To respond to these intensified challenges, risk analysis must pay careful attention to how risks are transmitted across time and space. This analysis needs to inform policy responses.

2.4.4. Increase the awareness of inequalities

Climate change affects human societies across the globe, but the negative impacts are not equal. Instead, the consequences are characterized by far-reaching inequalities. Vulnerable communities will be most heavily affected by the negative impacts of climate-related change. The questions of equity, justice, vulnerability and power relations must therefore be addressed, as well as the question of whose security is especially at risk.[104] Greater efforts must be made in security oriented analyses to address how diverse groups and communities are affected by climate change and how the measures taken—and not taken—affect them.

Climate change raises fundamental normative issues that require attention and shape the analysis and measures taken to respond to identified security risks. As the moral philosopher Gardiner notes, climate change is a perfect moral storm. It is inter-generational, trans-generational and enveloped in scientific uncertainties, which makes it a highly demanding but crucial issue to deal with.[105] Effective responses will therefore be required from national, regional and global organizations, which is the theme of chapter 3.

[104] O'Brien, K., 'Are we missing the point? Global environmental change as an issue of human security', *Global Environmental Change*, vol. 16 (2006), pp. 1–3.

[105] Gardiner, S. M., *A Perfect Moral Storm: The Ethical Tragedy of Climate Change* (Oxford University Press: Oxford, 2011).

3. Responding to climate-related security risks

This chapter explores how international organizations are responding to climate-related security risks. Section 3.1 provides an overview of 'integrated approaches'. Section 3.2 briefly examines how diverse intergovernmental organizations—such as the United Nations (UN), the European Union (EU), the Organization for Security and Cooperation in Europe (OSCE), the African Union (AU), the Association of South East Asian Nations (ASEAN) and Comunidad Andina (CAN)—frame and incorporate climate-related security risks. In order to address these multifaceted risks, the overriding challenge is to overcome the silos that exist between different policy communities. To probe more into the practical alternatives for accomplishing such work and contribute concrete experience of how organizations address combined climate and security risks, sections 3.3 and 3.4 present the core findings from two case studies: one on the European External Action Service (EEAS); and the other on the British and German international development organizations. These studies are the result of interviews conducted in early 2016. Section 3.5 summarizes the lessons learned from these investigations and discusses the policy implications.

3.1. Addressing climate risks through integrated approaches

The security challenges posed by climate change entered the high-level policy agenda in the early 2000s. Climate change as a security issue has since become a subsection of climate policy alongside mitigation and adaptation.[106] A major reason for the growing interest is the increasing evidence for and awareness of the large-scale impacts of climate change and climate variability on the biosphere and human societies, in combination with a lack of reduction in greenhouse gas emissions. As chapter 2 demonstrates, if not dealt with through proper adaptation measures, these impacts increase the risk of security challenges of different kinds.

However, addressing climate risks is challenging for many organizations. One way of grasping the complex linkages between climate-related change and security is to break the implications down into different policy areas, such as defence, foreign affairs, crisis management and development.[107] At the same time, however, due to the interplay between different thematic areas, integrated responses between various policy fields are also required. This involves for instance the integration of disaster risk reduction and climate change adaptation, the involvement of local vulnerabilities and adaptation capacity in security analysis and the integration of climate change into peacebuilding processes.[108] Hence, to address the

[106] Oels, A., 'Rendering climate change governable by risk: from probability to contingency', *Geoforum*, vol. 45 (2013), pp. 17–29.

[107] Vivekananda, J., Schilling, J. and Smith, D., 'Climate resilience in fragile and conflict-affected societies: concepts and approaches', *Development in Practice*, vol. 24, no. 4 (2014), pp. 487–501; and Rüttinger et al. (note 12).

[108] O'Brien (note 104); Birkmann and von Teichman (note 58); Steinbruner (note 5); and Matthew, R., 'Integrating climate change into peacebuilding', *Climatic Change*, vol. 123, no. 1 (2014), pp. 83–93.

multifaceted security risks posed by climate change, organizations must address issues that go beyond their traditional issue areas.

Since security as a concept is strongly associated with hard security and a military response, many researchers are sceptical about the engagement of hard security actors with climate change.[109] We understand this scepticism, particularly if the discussion is framed in terms of security threats (as discussed in section 2.1), but we also understand why hard security actors are interested in climate change. Its consequences are relevant to their mandate. It is absolutely essential, however, that the responses they adopt are pertinent. As noted in section 2.1, it is essential to take a comprehensive security approach that emerges from human security.

Because there is a scepticism of characterizing climate change in terms of security some development organizations have refrained from doing so in their work. Instead, the concepts of 'resilience' and 'fragility' are adopted to address these challenges.[110] Despite the different ways of framing climate-related security risks, it is important for the diverse policy organizations addressing these risks to find ways to share knowledge and to collaborate. This is essential because the multifaceted and multidimensional character of climate-related security risks involve short, medium- and long-term implications. Different organizations bring diverse security risks into focus and adopt different time perspectives, which may be relevant for identifying synergies in the responses and for avoiding counter-productive measures.

3.2. Overview of international and regional organizations

Regional and global organizations play a crucial role in addressing climate-related security risks. This section describes and analyses how different policy organizations address and incorporate climate-related security challenges into their work. At the global level, it examines the UN bodies and agencies that address climate change from the perspective of international peace (the UN Security Council) and those that seek to strengthen climate resilience and human security—the UN agencies that contribute to the United Nations Framework Convention on Climate Change (UNFCCC) process. At the regional level it describes organizations such as the AU, ASEAN and the EU, which address climate change from the perspectives of human security and state security. It maps the policy processes and instruments within global and regional organizations that are relevant to policymaking on climate change and security; and describes how these organizations have framed the security implications of climate change, and the policies and instruments they have employed. The agencies are involved in different issue areas that are affected by climate-related security risks in various ways.

[109] Deudney, D., 'Environmental security: a critique', eds D. Deudney and R. Matthew, *Contested Grounds: Security and Conflict in the New Environmental Politics* (State University of New York Press: Albany, 1999); and Hartmann, B. 'Rethinking climate refugees and climate conflict: Rhetoric, reality and the politics of policy discourse', *Journal of International Development*, vol. 22 (2010), pp. 233–46.

[110] Boas, I. and Rothe, D., 'From conflict to resilience? Explaining recent changes in climate security discourse and practice', *Environmental Politics*, vol. 25, no. 4 (2016), pp. 613–32; and Vivekananda et al. (note 107).

These organizations can therefore provide important lessons on how different policy communities have started to address the topic and, more specifically, how these organizations address cross-cutting security issues and develop governance approaches and instruments to tackle these issues.

3.2.1. UN agencies' responses to climate-related security risks

The United Nations plays a central role in addressing climate-related security risks. The UN system is complex and comprises a large number of bodies with different mandates and a wide variety of focus areas. The UN system therefore provides a good overview of the multifaceted character of climate change and how this might lead not just to one security risk, but to many. This section describes how the various UN agencies involved in the different thematic areas discussed in chapter 2, such as international peace, migration and disaster management, have responded to the security implications of climate change.

The awareness of anthropogenic climate change came into focus during the UN General Assembly's plenary meeting in 1988.[111] The Assembly expressed concern that climate change was 'threatening present and future generations with potentially severe economic and social consequences'.[112] As a result, the United Nations Environment Programme (UNEP) was given a mandate to raise awareness of the 'problem of climate change' and establish an 'intergovernmental panel on climate change' (the IPCC). However, it was not until some years later that climate change was connected with security through the increased focus on human development in the 1990s. This change in focus had a profound impact on the concept of security and views on what constituted a security threat. Following the discussions on human security, the United Nations Development Programme (UNDP) was also given a mandate to address climate change in connection with human development.[113] However, climate change would not become a priority for the UNDP for some time.

In the meantime, the UNFCCC entered into force in 1994, with its primary task to limit average global temperature increases and coordinate adaptation efforts within the UN. There have been continuous discussions about the correct strategies for mitigation and adaptation ever since.

The most recent IPCC report suggests that: 'In circumstances where property rights and conflict management institutions are ineffective or illegitimate, efforts to mitigate or adapt to climate change that change the distribution of access to resources have the potential to create and aggravate conflict'.[114] This calls for context-specific responses that are difficult to establish through the globally framed and generic guidelines provided by the UNFCCC.[115] Instead, there is a growing

[111] United Nations, General Assembly, Protection of global climate for present and future generations, 70th Plenary Meeting, A/RES/43/53 (1988).

[112] United Nations, General Assembly (note 111), p. 1.

[113] Hall, N., 'Moving beyond its mandate? UNHCR and climate change displacement', *Journal for International Organisations Studies*, vol. 4, no. 1 (2013), pp. 91–108; and Dalby, S., *Security and Environmental Change* (Polity: Cambridge, 2009).

[114] Adger (note 4), p. 773.

[115] Ojha et al. (note 5).

consensus that responses to climate change need to be conflict-sensitive and adapted to local conditions.[116]

MOVING THE CLIMATE SECURITY DEBATE FORWARD IN 2007–08

Improving the ways in which to respond to climate change is an iterative process, where new scientific knowledge on the effects of climate change is connected with insights on conflict, peacebuilding and resilience. There is, however, also a political dimension within the UN, which could partly explain the momentum that the discussions and projects on the security aspects of climate change gained in 2007–08. During this period, the debates within the United Nations Security Council, as well as developments within UNDP and UNEP, reflect this momentum.

The United Nations Security Council has a mandate to play a significant role in the UN response to climate change due to its 'legal authority to override any contradictory obligations of member states and because of the breadth of its increasingly multimodal methods of operations'.[117] The Security Council can for instance punish environmental crimes using legislative decisions and sanctions. However, it was not until 2007 that the Security Council developed a more overt approach to climate change. At the initiative of the United Kingdom, the Security Council organized a formal debate on the topic, and this was followed by several additional initiatives, including a resolution in the General Assembly, another debate in the Security Council in 2011 initiated by Germany and more informal working group meetings—the so-called Arria Formula meetings—in 2013 and 2015.[118]

Until now, the Security Council has primarily used a so-called 'non-response strategy' in relation to climate change. This means that the Council does not explicitly respond to climate change but to other phenomena, such as civil war, desertification, increased migration or natural disasters: phenomena which are linked to the implications of climate change.

The advantage of this strategy is that by not using the term climate change, polarized positions are avoided. The disadvantage is that the strategy remains reactive and passive, and does not lead to the planning of effective programmes that can contribute to more ambitious goals. Scott suggests that the Security Council should develop a more conscious strategy in which the security implications of climate change are explicitly recognized and addressed, but without tackling the causes, i.e. mitigation strategies.[119] This could be done for instance by integrating climate considerations into the existing tools of the Security Council. This is a controversial issue, however, and many countries, mainly within the

[116] Rüttinger et al. (note 12), p. 64; and Barnett, J. and O'Neill, S., 'Maladaptation', *Global Environmental Change*, vol. 20, no. 2 (2010), pp. 211–13.

[117] Scott, S. V., 'Implications of climate change for the UN Security Council: mapping the range of potential policy responses', *International Affairs*, vol. 91, no. 6 (2015), pp. 1317–33, p. 1333.

[118] United Nations General Assembly, Climate change and its possible security implications, A/RES/63/281, 11 June 2009; Liberatore, A. 'Climate change, security and peace: the role of the European Union', *Review of European Studies*, vol. 5, no. 3 (2013); and Scott (note 117).

[119] Scott (note 117).

Group of 77 and China, are opposed to the expansion of the Security Council's mandate in this way.[120]

The UNDP also made climate change one of its top priorities in 2007. This was reflected at the rhetorical, policy, structural and operational levels. For example, climate change was the key topic in that year's Human Development Report, where it was framed as 'a massive threat to human development'.[121] In 2008 the UNDP adopted a new strategy document that gave the organization a clear focus on adaptation and resulted in a big increase in the number of climate advisers and adaptation programmes. This important shift can be explained partly by the priorities of the UNDP leadership but also by the expansion of financing opportunities.[122]

Linking climate change with human development was also a theme in a 2009 World Bank report on the social dimensions of climate change, and in a 2011 report on human rights and climate change.[123] Other examples of an increased focus on the links between climate change and security can be found at UNEP. UNEP has had a specific programme on Environmental Cooperation for Peacebuilding (ECP) since 2008, which primarily focuses on the linkage between environmental issues and conflict but also includes climate change. The objective of the ECP is to build an evidence base that can inform policy and programme development, but also to provide technical assistance to UN peacekeeping missions.[124]

The drive to connect climate change with security issues during this period also affected the definition of refugees at the UN Refugee Agency (United Nations High Commissioner for Refugees, UNHCR). Some scholars argue that discussions on climate refugees were primarily held at the rhetorical level, and that translation of these discussions into concrete policies was limited.[125] One explanation for this could be that the legal framework, the Refugee Convention that guides the UNHCR, does not provide a mandate to address climate refugees.[126] Against this background, practitioners and scholars alike have argued the need for a new

[120] Thompson, P., Statement on behalf of the Group of 77 and China by Ambassador Peter Thompson, permanent representative of Fiji, to the United Nations and chairman of the group of 77, at the Arria Formula meeting on the security dimensions of climate change, 15 Feb. 2013.

[121] United Nations Development Programme, *Human Development Report, 2007–2008: Fighting Climate Change, Human Solidarity in a Divided World* (Palgrave Macmillan: New York, 2007), p. 3.

[122] Hall, N., Displacement, Development, and Climate Change (Routledge: London, 2016).

[123] Mearns, R. and Norton, A. (eds), *Social Dimensions of Climate Change: Equity and Vulnerability in a Warming World* (World Bank: Washington, DC, 2009); and McInerney-Lankford, S., Darrow, M. and Rajamani, L., *Human Rights and Climate Change: A Review of the International Legal Dimensions* (World Bank: Washington, DC, 2011).

[124] United Nations Environment Programme, Addressing the Role of Natural Resources in Conflict and Peacebuilding: A Summary of Progress from UNEP's Environmental Cooperation for Peacebuilding Programme, 2008–2015 (UNEP: Nairobi, 2015). The programme is funded by the EU and Finland. The ECP project involves several academic institutes. It has produced six edited volumes on the topic, as well as several reports co-authored with other UN agencies, between 2007 and 2015.

[125] Hall, N., 'Money or mandate? Why international organisations engage with the climate change regime', *Global Environmental Politics*, vol. 15, no. 2 (2015), pp. 87–88.

[126] According to the UNHCR, a person must be facing persecution to be considered a refugee, see Hall (note 113); and Biermann, F. and Boas, I., 'Preparing for a warmer world: towards a global governance system to protect climate refugees', *Global Environmental Politics*, vol. 10, no. 1 (2010), pp. 60–88.

Box 3.1. Strengthening the synergies between disaster risk reduction and climate change adaptation

There is broad agreement among policymakers, scholars and practitioners on the need to strengthen the synergies between disaster risk reduction and climate change adaptation in order to reduce vulnerabilities to climate and environmental change. Such integration can be promoted by:

The disaster risk reduction community expanding its work to cover a broader set of issues that cause vulnerabilities, such as rural and urban livelihoods, poverty and inequality;

Strengthening the common knowledge base between the two policy communities, which can be done through the creation of multi-hazard risk reduction units that analyse hazard and vulnerability together;

Developing guidelines for disaster response and recovery on how to integrate climate risks into planning and programming; and

Adopting a human rights-based approach, since many causes of vulnerability are intrinsically linked to lack of respect for basic human rights.

Sources: Schipper, E. et al., 'Linking disaster risk reduction, climate change and development', *International Journal of Disaster Resilience in the Built Environment*, vol. 7, no. 2 (2016); and Schipper, L. and Pelling, M., 'Disaster risk, climate change and international development: scope for, and challenges to, integration', *Disasters*, vol. 30, no. 1 (2006), pp. 19–38.

treaty or UNFCCC protocol on climate refugees.[127] However, what constitutes a climate refugee is contested and there is no consensus on the issue.[128]

EXAMPLES OF ONGOING WORK STRIVING FOR AN INTEGRATED APPROACH

Looking at more recent responses to climate-related security risks within the UN system, since 2015 UNEP has been involved with the EU in a joint programme on climate change and conflict.[129] This programme seeks to develop new methodologies for integrating conflict and climate vulnerability analysis, which is generally considered to be an important step in addressing combined conflict- and climate-related risks in a consistent manner.[130] The programme could play an important role in providing evidence and elaborating assessments to improve policy, practice and programming.

Another example of ongoing work to address climate change relates to extreme weather events and disasters with the potential to destroy livelihoods. The Sendai Framework for Disaster Risk Reduction was adopted on 18 March 2015. The United Nations Office for Disaster Risk Reduction (UNISDR) is responsible for

[127] Biermann and Boas (note 126).

[128] Trombetta, M. J., 'Linking climate-induced migration and security within the EU: insights from the securitization debate', *Critical studies on Security*, vol. 2 no. 2 (2014), pp. 313–47; and McAdam, J., 'Environmental migration governance', ed. A. Betts, *Global Migration Governance* (Oxford University Press: Oxford, 2009).

[129] UNEP (note 124).

[130] Rüttinger et al. (note 12).

coordinating the international effort to develop a strategy for disaster reduction. Given the interconnections between disaster risks and climate change, integrating disaster risk management more closely with adaptation efforts was an important question in the development of this framework.[131] This integration will be fundamental to achieving more efficient responses and ensuring human security (see box 3.1). Nonetheless, the disaster risk reduction and climate change adaptation policy communities fundamentally differ in a number of important ways that hamper effective integration. These differences relate to spatial and temporal scales, the knowledge base and norm systems.[132] In the same way as the UNFCCC was criticized for being overly technocratic and top-down in its approach, the Sendai Framework has been described as excluding local communities, which will make it more difficult to reduce the vulnerability of some groups to disasters.[133]

One final actor within the UN system that is of great relevance in responding to the negative effects of climate change is the UN Office for the Coordination of Humanitarian Affairs (OCHA). By directing humanitarian responses to environmental and conflict-related emergencies, OCHA is tasked with mainstreaming human security across the UN system. OCHA has made climate change a thematic focus for its humanitarian advocacy since at least 2009. Mason notes that OCHA's work on climate vulnerability in Central and East Africa could be seen as the most prominent example of an 'operational convergence' of climate change and human security.[134] OCHA is also central to UN humanitarian civil-military coordination, and compliance with the Oslo Guidelines on the use of foreign military and civil defence assets in disaster relief to ensure that the use of these assets does not compromise the principles of humanitarian action.[135] However, this division between what should be seen as a political response and impartial, neutral disaster relief is problematic. For example, while a 'biophysical' approach to disaster risk reduction—where climate threats are seen as externally received impacts to be mitigated by building the resilience of vulnerable populations—is likely to give operational access for agencies and is in line with the depoliticized stance that reflects UN norms, such an approach also leads to a focus on technical interventions outside the scope of geopolitical relations.[136] Hence, by default, such an approach will likely fail to address the root causes or trajectories of violence.

This overview shows that UN agencies have begun to address climate change to different extents. This work needs to be strengthened by, for instance, ensuring the conflict- and context-sensitivity of activities.

[131] Kelman, I., 'Climate change and the Sendai framework for disaster risk reduction', *International Journal of Disaster Risk Science*, vol. 6, no. 2 (2015), pp. 117–27.

[132] Birkmann and von Teichman (note 58).

[133] Zia, A. and Hammond Wagner, C., 'Mainstreaming early warning systems in development and planning processes: multilevel implementation of the Sendai Framework in Indus and Sahel', *International Journal of Disaster Risk Science*, vol. 6, no. 2 (2015), pp. 189–99.

[134] United Nations, Office for Coordination of Humanitarian Affairs (OCHA), *Climate Change: Campaign Toolkit* [n.d.]; and Mason, M., 'Climate insecurity in (post) conflict areas: the biopolitics of United Nations vulnerability assessments', *Geopolitics*, vol. 19, no. 4 (2014), pp. 806–28.

[135] UN OCHA, 'On message: Civil-military coordination, 2012.

[136] Mason (note 134).

3.2.2. The responses of regional organizations to climate-related security risks

This section provides an overview of how some regional organizations have started to incorporate the issue of climate change into their work. A number of organizations have been selected, working in different parts of the world, that focus on either socio-economic development or security issues. As none of the organizations has climate change as part of its core mandate, the emphasis is on how each has integrated climate change into its different issue area.

THE EUROPEAN UNION

As the negative impacts of climate change on, for example, international relations, global trading systems and people's livelihoods, both within and outside the EU, have been increasingly acknowledged, the EU has slowly incorporated climate change into its work at all levels, including within the area of the Common Security and Defence Policy (CSDP).[137] A lot of relevant work is also done by the European Commission, which emphasizes the crucial role of coordination between various EU bodies in order to achieve the 'comprehensive policy responses' so often aimed for.[138]

Since the EU first acknowledged them in 2008, the negative impacts of climate change have primarily been framed as a threat multiplier. As such, climate change 'exacerbates existing trends, tensions and instability' and could lead to 'political and security risks that directly affect European interests'.[139] Given the complex institutional setting of the EU, in combination with the cross-sectorial challenge that climate change poses for human societies, this threat multiplier approach is seen as a necessity, albeit one that prevents the formulation of more coherent and forceful policies.[140]

However, the EU has taken important steps towards its ambition to be a more coherent foreign policy actor in the past decade, suggesting that it is moving away from its previous ad hoc crisis management responses to more coordinated and preventive efforts.[141] This is also reflected in the integration of climate change into the EU's broader development strategies. The EU is the world's biggest aid donor and also the largest contributor of climate finance to developing countries.[142] Its

[137] Zwolski, K. and Kaunert, C., 'The EU climate security: a case of successful norm entrepreneurship', *European Security*, vol. 20, no. 1 (2011), pp. 21–43; Schaik van L. and Schunz, S., 'Explaining EU Activism and Impact in Global Climate Politics: Is the Union a Norm- or Interest-Driven Actor?', *Journal of Common Market Studies*, vol. 40, no. 1 (2012), pp. 169–86; and Liberatore (note 118).

[138] This work is primarily undertaken at the DG International Cooperation and Development (Devco), DG Climate Action (Clima), DG Environment and DG Humanitarian Aid and Civil Protection (Echo). See European Commission, Providing Security in a Changing World, Report on the Implementation of the European Security Strategy, 2008, S407/08, p. 2; and, e.g. Council of the European Union, Council conclusions on the Horn of Africa, Press release, Foreign Affairs Council, 14 Nov. 2011.

[139] European Commission (note 77), p. 2.

[140] Vogler, J., 'Changing conceptions of climate and energy security in Europe', *Environmental Politics*, vol. 22, no. 4 (2013), pp. 627–45; and Floyd, R., 'Global climate security governance: a case of institutional and ideational fragmentation', *Conflict, Security & Development*, vol. 15, no. 2 (2015), pp. 119–46.

[141] For an overview see Boin, A., Ekengren, M. and Rhinard, M., *The European Union as Crisis Manager: Patterns and Prospects* (Cambridge University Press: Cambridge, 2013).

[142] Council of the European Union, European Commission and the Luxemburg Presidency, '*European Union Climate Funding for Developing Countries*' (2015).

foreign policy instruments, such as the Instrument Contributing to Stability and Peace (IcSP) and the Partnership Instrument (PI), as well as the Global Climate Change Alliance (GCCA) are examples of EU initiatives for addressing climate-related security risks in regions outside the EU.[143]

THE ORGANIZATION FOR SECURITY AND COOPERATION IN EUROPE

The OSCE has promoted a comprehensive approach to security by striving to combine politico-military, economic, environmental and human aspects of security. According to scholars such as Emanuel Adler one of the OSCE's main achievements in the post-cold war era has been to help reshape the concept of security from essentially meaning military deterrence to take on a broader notion of cooperative and collective security that includes non-military threats and trans-boundary risks.[144] At quite an early stage in its existence, the OSCE highlighted environmental challenges to security as a means to broaden the scope of cooperative and confidence-building measures in the 'OSCE region', which stretches from Vancouver to Vladivostok.

The climate change and security nexus has been increasingly integrated into the work of the OSCE.[145] For example, the 2007 Madrid Ministerial Declaration on 'Environment and Security' recognised climate change as a 'long-term challenge' and highlighted the role of OSCE in addressing the complex challenges to states and societies in the OSCE region.[146] The declaration also defined climate change as a 'threat magnifier', arguing that environmental degradation can be considered to contribute to conflict.

Moreover, at the 2009 Bucharest conference on the 'Security Implications of Climate Change in the OSCE region', the potential impact of climate change on security in the OSCE area was discussed, as were means to foster dialogue and international co-operation on the security aspects of climate change.[147] In addition, the 2014 Basel Ministerial Council Decision on 'Enhancing Disaster Risk Reduction' highlighted 'the exacerbating effect climate change may have on the frequency and magnitude of disasters, and therefore the importance of climate change mitigation and adaptation to effectively reducing disaster risk'.[148] Recently, the OSCE's Economic and Environmental Forum has focused on the issue of water governance, which according to the OSCE is closely linked to climate change and security.

[143] Examples of important work for addressing climate risks within the EU could be found in the Flooding directive (EC 2007/60), the implementation of the Sendai framework (COM/2014/0216) and the Civil protection mechanism (Decision 1313/2013/EU); and Regulation 2016/369.

[144] Adler, E., 'Seeds of peaceful change: the OSCE's security community-building model', eds. E. Adler and M. Barnett, *Security Communities* (Cambridge University Press: Cambridge, 1998).

[145] Organization for Security and Co-operation in Europe (OSCE), Climate Change and Security: Unprecedented impacts, unpredictable risks, 2015.

[146] Organization for Security and Co-operation in Europe (OSCE), Madrid Declaration on Environment and Security, MC.DOC/4/07, 2007.

[147] Organization for Security and Co-operation in Europe (OSCE), Conference on the security implications of climate change in the OSCE region, Bucharest, 5–6 Oct. 2009.

[148] Organization for Security and Co-operation in Europe (OSCE), Twenty-first Meeting of the Ministerial Council, Basel, 4–5 Dec. 2014.

The Environment and Security Initiative (ENVSEC) is an instrument for co-ordinated regional action on environmental issues and security. It was founded in 2003 as a partnership between six international organizations.[149] ENVSEC's mission is to contribute to the reduction of environmental and security risks through strengthened co-operation among and within countries in four regions: Central Asia, Eastern Europe, Southern Caucasus and South-Eastern Europe.

THE AFRICAN UNION

The African Union was formed in July 1999 with a vision to build an 'integrated, prosperous and peaceful Africa'.[150] Its first official programme—the New Partnership for Africa's Development (NEPAD)—was created in 2001. NEPAD explicitly includes global warming and climate change as priority areas.[151] The Peace and Security Council (PSC) within the AU was set up in 2002 and has a strong ambition to address climate change. However, given the power and authority that could be exercised through the PSC, it has thus far been 'underutilized' in combating climate change.[152] Environmental issues are therefore still largely dealt with in the rural economy and agriculture sector under, for example, policies directed at food security, livestock, water and natural resources, and desertification. Climate change is not explicitly mentioned, and nor are the linkages between the various clusters such as livestock/food security and conflict.

A major breakthrough in the AU's response to climate change came in 2007 when it adopted a common view in the 'Declaration on Climate Change and Development in Africa'.[153] The heads of state and governments of AU member states committed themselves, among other things, to: integrate climate change adaptation strategies into national and sub-regional development; improve public awareness on climate change; improve cooperation between national meteorological and hydrological services; and establish regional climate centres and regional economic communities.

The most recent major contribution to the AU's work on climate change came in May 2014, with the delivery of a draft statement on the African Union Strategy on Climate Change.[154] A noteworthy feature of this report is that climate change, through its impacts on natural resources, is explicitly mentioned as a security issue.[155] One of the goals (no. 34) in the strategy is thus to: 'Promote peace and good practices in preventing climate-induced conflicts and settling disputes'. Nonetheless, the AU continues to primarily focus on disaster risk reduction,

[149] OSCE, Regional Environment Centre for Central and Eastern Europe (REC), UNDP, United Nations Economic Commission for Europe (UNECE), UNEP and NATO, the latter as an associated partner.

[150] African Union, AU in a Nutshell, 2015.

[151] African Union, *The New Partnership for Africa's Development* (African Union: Abuja, 2001), pp. 34–35.

[152] van Wyk, J. A., 'The African Union's response to climate change and climate security', eds D. A. Mwitturubani and J. A. van Wyk, *Climate Change and Natural Resource Conflicts in Africa* (Institute for Security Studies: Addis Ababa, 2010).

[153] African Union, Declaration on Climate Change and Development in Africa, Assembly/AU/Decl.4, VIII, 30 Jan. 2007.

[154] African Union, Draft African Union Strategy on Climate Change, 2014, AMCEN-15- REF-11.

[155] AU 2014 (note 157), p. 55.

capacity building and resilience to various climate events related to food security, without linking these to conflict. All the signs point to the need for an AU climate regime with shared norms and principles and more certain connections to regional security, but this has not been formally addressed within the existing organizational scheme.

THE ECONOMIC COMMUNITY OF WEST AFRICAN STATES

When it was founded in 1975, the Economic Community of West African States (ECOWAS) was primarily thought of as an economic union, encouraging economic cooperation and trade between its 15 members.[156] Since then, the organization has expanded to cover a wide array of issues. This enabled climate change to be addressed, albeit indirectly, in sectors such as agriculture, water and energy. However, increased interest in climate change in recent years has been reflected in several strategic documents. In 2010, a 'Vision 2020' document framed climate change as one of several 'socio-economic bottlenecks'.[157] In the same year, ECOWAS announced that ministers had adopted a 'Framework of Strategic Guidelines on the Reduction of Vulnerability and Adaptability to Climate Change in West Africa'.[158] The next step for the organization, however, is to improve the integration of climate change factors into its work on conflict prevention.[159]

THE SOUTHERN AFRICAN DEVELOPMENT COMMUNITY

The Southern African Development Community (SADC) aims to promote durable peace through socio-economic development and good governance among its member states.[160] When addressing climate change, SADC is primarily concerned about its impacts on water security (drought) and the indirect effects this will have on food security. The majority of its reports and strategic documents frame climate change as a human security issue, but the link to conflict and state security is also mentioned in policy papers on climate change. As one policy paper concludes: 'the impact is already culminating in conflict over resources such as the conflict over the fishing in the Zambezi, water along the main river basins and land within some SADC countries'.[161] A strategic document on the water sector states that 'long term forecasting is useful to plan energy price and agriculture production as well as to prevent conflicts'.[162]

[156] Benin, Burkina Faso, Cape Verde, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo.

[157] Economic Community of West African States (ECOWAS), *ECOWAS Vision 2020*, 2010.

[158] ECOWAS, Ministers adopt framework of strategic guidelines on the reduction of vulnerability to climate change in West Africa, Press release, 19 Mar. 2010.

[159] United Nations Environmental Programme, *Livelihood Security: Climate Change, Migration and Conflict in Sahel* (UNEP: Nairobi, 2011), p. 69.

[160] Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

[161] Lesolle, D., *SADC Policy on Climate Change: Assessing the Policy Options for SADC Member States*, SADC Research and Policy Paper Series 01/2012 (SADC Policy Analysis and Dialogue Programme: Gaborone, 2012), p. 13.

[162] Southern African Development Community, *Climate Change Adaptation in SADC: A Strategy for the Water Sector* (Southern African Development Community: Gaborone, 2011).

In 2010, a trilateral cooperation to build economic and social resilience to climate change was established through the 'Programme on Climate Change Adaptation and Mitigation in the Eastern and Southern African Region'.[163] A programme to promote modelling and projections is a priority. SADC already has a Regional Early Warning Centre in place. One way forward would be to establish a climate-sensitive conflict early warning system.

THE ASSOCIATION OF SOUTH EAST ASIAN NATIONS

The Association of South East Asian Nations (ASEAN) was founded in 1967 in an attempt to strengthen the region in multilateral negotiations, and to promote peace and development through economic integration among its 10 member states.[164] There have been several climate-related initiatives in the past decade. Climate change is now seen as a 'cross-sector' issue relating to agriculture, forestry, energy and transport, as well as science and technology.[165] Climate change is predominately framed as connected to disaster risk reduction or societal resilience. Hence, even though ASEAN has taken a step forward in establishing a climate regime and integrating climate change into a variety of sectors, the organization has not yet taken a leading role in regional programme development on mitigation or adaptation.[166]

COMUNIDAD ANDINA

The Andean Community (Comunidad Andina, CAN) has its roots in the Cartagena Agreement, which was adopted in 1969 in an attempt to strengthen social and economic development in the Andean region. Today CAN has four member states.[167] The Andean countries are relatively peaceful societies and security plays a minor role in the work of CAN. However, social and economic development in the region are intrinsically linked to its diverse but vulnerable ecosystems and to natural resources. CAN has paid increased attention to environmental issues in the past decade, including climate change. This is reflected in a number of its decisions and strategies, most notably the creation of the Andean Committee for the Prevention of Disasters in 2002, and the creation of a Council of Ministers of the Environment and Sustainable Development (*Consejo de Ministros de Medio Ambiente y Desarrollo Sostenible de la Comunidad Andina*) in 2004.[168] Through these processes, CAN has primarily addressed climate change in terms of its negative impacts on water and food security, disaster risks and deforestation. The

[163] Southern African Development Community, *Programme on Climate Change Adaptation and Mitigation in the Eastern and Southern Africa Region COMESA-EAC-SADC* (Southern African Development Community: Gaborone, 2011).

[164] Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Viet Nam.

[165] Sahraie, M., 'The ASEAN actions on climate change: recognizing or pro-actively addressing the issue?', *International Development and Law (IDLO) Working Paper Series* no. 5 (2011), p. 8.

[166] Scott-Hauger, J., *Climate Change and Security in the Asia-Pacific Region: A Role for APEC?* (Daniel K. Inouve Asia-Pacific Center for Security Studies: Honolulu, 2011).

[167] Bolivia, Colombia, Ecuador and Peru.

[168] Comunidad Andina, Decision 529 (2002), Lima; and Comunidad Andina, Decision 596 (2004), Quito.

Andean Strategic Agenda (*Agenda Estratégica Andina, 2010*), which established a number of programmes to enable the Andean countries to adapt to the irreversible impacts of climate change, was presented in a similar vein, addressing climate change primarily in terms water and food security.[169]

3.2.3. Concluding remarks

This overview shows that UN agencies and regional organizations have started to integrate climate change into their work. While some organizations have primarily addressed climate change at the rhetorical level, others have made serious attempts to incorporate the issue into their respective policy areas. As none of the organizations examined has climate change as its core responsibility, each has faced the task of integrating climate change into other issue areas such as disaster risk, water and food security, and rural development. The UN Security Council, the AU and SADC, which are three organizations that explicitly work to promote peace, are the only ones to have made linkages between climate change and violent conflict in their high-level policies. However, the security approaches differ in these organizations stretching from human security to state-based concepts. Other organizations—such as the EU, the OSCE and ECOWAS—have a focus on socio-economic development in which climate-related security risks are recognized.

It is nonetheless clear that most organizations need to work in a more integrated and context-sensitive manner to address the multifaceted risks posed by a changing climate. Translating high-level policies into concrete action, however, demands in-depth analysis of the organizations' strategies and internal procedures. Section 3.3 therefore moves beyond this overview of general organizational approaches to a refined analysis of the management of climate-related security issues within the EU.

3.3. Climate change in an EU security context

The comparative advantage of the EU as a foreign policy actor is found in the variety of policy tools at its disposal. This would suggest that the EU is well equipped to address truly cross-sectorial issues such as the security risks posed by climate-related change. While true in theory, a comprehensive approach to climate security requires institutional integration and policy coherence between development, security and climate action, which are still lacking within the EU and its member states. This results in ad hoc responses with no clear connection to a more long-term and strategic goal, which suggests a mismatch between the analysis of climate-related security risks and political efforts, such as aligning resources or extending mandates to avoid these risks.[170]

[169] Comunidad Andina, Principios Orientadores y Agenda Estratégica Andina, [Guiding principle and strategic agenda for the Andes] (2010), Lima.

[170] Youngs, R., *Climate Change and European Security* (Routledge: London, 2015); Herrero, A. and Knaepen, H., *Run-up to 2015: A Moment of Truth for EU External Climate Action*?, Briefing note (European Centre for Development Policy Management: Maastricht, Sep. 2014); and Zwolski and Kaunert (note 137).

By combining a review of existing literature and interviews conducted within EU institutions, this section focuses on the efforts made in the EU to develop a narrative on climate security and ways to respond to climate-related security risks, with a particular focus on the European External Action Service (EEAS).[171] While acknowledging the EU's framing of climate change as a 'threat multiplier', this section explores how climate change is mainstreamed into other areas of relevance to EU foreign and security policies. It also outlines some of the major obstacles to achieving an efficient and integrated approach towards climate-security risks in the work of the EEAS.

3.3.1. Addressing climate change and security in existing policy areas

As the threat multiplier approach suggests, the main response so far to climate change in EU foreign and security policies has been to mainstream climate security into existing strategies and policy tools. For the sake of analysis, one way of understanding these linkages is to divide the relevant policy areas into (*a*) diplomacy; (*b*) development; and (*c*) defence, which are elaborated on below.

MULTILATERALISM AND CLIMATE DIPLOMACY

With the ratification of the Lisbon Treaty in 2009 the EU took important steps towards becoming a coherent global actor, but the academic debate on the EU's role in world politics, and what could be seen as constituting power for the Union, continues to be highly polarized.[172] Based on the fact that the EU is a collaboration of sovereign member states, with no military power of its own, Liberatore presents the EU as a 'civilian power' with a clear preference for multilateralism.[173] With no coercive means of power, the EU seeks to avoid unilateral action and instead uses economic, legal and diplomatic levers to pursue its common interests. However, the recent developments concerning Brexit have once again highlighted the problems for the EU in firmly establishing what should be seen as these common interests. Since at least the European Security Strategy of 2003, 'our security and prosperity' has been seen as increasingly dependent on an effective multilateral system.[174] This holds true also for the EU's response to tackling climate change and addressing its negative impacts.

In the light of the slow pace of progress in international climate negotiations over the last few decades, the EEAS and the European Commission jointly produced a paper urging a stronger role for foreign policy in international climate negotiations.[175] They suggested that this should be done based on three strands

[171] This section builds on the report by Hannes Sonnsjö and Niklas Bremberg (note 1) linking climate change to the EU's foreign and security policies. See this report for more information on our methodological and analytical approach, as well as more extensive references.

[172] Howorth, J., The EU as a global actor: grand strategy for a global grand bargain?, *Journal of Common Market Studies*, vol. 48, no. 3 (2010), pp. 455–74.

[173] Liberatore (note 125); and Mabey, N., Gallagher, L. and Born, C., *Understanding Climate Diplomacy: Building Diplomatic Capacity and Systems to Avoid Dangerous Climate Change* (E3G: London, 2013).

[174] Council of the European Union, *A Secure Europe in a Better World: European Security Strategy*, 12 December 2003, p. 9.

[175] EEAS and the European Commission, Towards a Renewed and Strengthened EU Climate Diplomacy, Joint Reflection Paper, July 2011.

of action: promoting climate action, supporting the implementation of this action, and continuing the work on climate change and international security. Climate diplomacy is today a distinct policy area within the EU with its own strategic priorities in diplomatic dialogue and initiatives, including on the possible security implications.[176] One initiative to integrate EU environmental policies into external relations practices came in 2012 when the Green Diplomacy Network (established in 2002) was placed under the EEAS. The purpose of this network is to make use of the EU delegations and diplomatic missions, and to gather and exchange information with the member states, in order to facilitate a more coordinated response to climate change by the EU as a whole.

The most recent developments in the field of climate diplomacy are reflected in the European Councils' conclusions adopted in the aftermath of the Paris Conference, held in late 2015.[177] The conclusions mark a step forward, with their emphasis on the direct and indirect international security impacts of climate change in terms of migration, food security, reliable access to resources, water and energy, and so on. Three strands, initially presented in 2011, are highlighted within the conclusions as elements of climate diplomacy and accompanied by an invitation to the High Representative and the Commission to work with EU member states to elaborate a climate diplomacy action plan and report back by the summer of 2016.[178] The strands are: (*a*) continue to advocate climate change as a strategic priority; (*b*) support implementation of the Paris Agreement; and (*c*) increase efforts to address the nexus between climate, natural resources, prosperity and stability. Furthermore, the 'strategic and multifaceted threat posed by climate change' should be addressed by the EU, for example as part of the EU Global Strategy to be presented by High Representative Frederica Mogherini in June 2016.[179]

In conclusion, the post-Paris setting has put climate change firmly on the foreign policy agenda. It also highlights the EU's ambition to mainstream climate into other policy areas, and the need for coordination between several distinct EU bodies.

DEVELOPMENT AND CONFLICT PREVENTION

Chapter 2 demonstrated the growing consensus among conflict researchers on pathways linking climate-related change with the increased risk of violent conflict. However, this has not necessarily been translated into any significant change in the ways in which the EU addresses the root causes of conflict. The Gothenburg Programme for preventing violent conflict, adopted in 2001, mentions the role of environmental policies as one of several instruments in an extensive set of conflict prevention actions. In the document, the EU is urged to use a wide selection of instruments in a 'more targeted and effective manner in order to address root-

[176] European Council, Council conclusions, Press release, Foreign Affairs Council, June 2013, 11442/1/1; and European Council, European climate diplomacy after COP21, Council Conclusions, 2016 6061/16

[177] European Council, 6061/16 (note 176).

[178] European Council, 6061/16 (note 176).

[179] European Council, 6061/16 (note 176), p. 5.

causes of conflict such as … competition for scarce natural resources'.[180] More than 10 years later, despite several initiatives on the linkages between climate change and international security, neglect of the role of climate change in conflict prevention is still evident. In order to find examples of initiatives where climate change has been incorporated into the realm of conflict prevention at the EU level, it is necessary to examine the area of development policy and the ways in which climate change and variability have an impact on fragility and poverty.

In 2007, the European Commission increased its ambition to address fragile states by making better use of the wide variety of instruments at the EU's disposal. In a communication from the Commission, fragility is defined as 'weak or failing structures and to situations where the social contract is broken due to the State's incapacity or unwillingness to deal with its basic functions' or meet its 'obligations and responsibilities', regarding for example management of resources or the security and safety of the populace.[181] It is the underlying problem of governance rather than external stress that is emphasized. Nonetheless, climate change is mentioned as a trigger that might exacerbate fragile situations by introducing new and multiple impacts in countries with low adaptive capacity. Furthermore, the link between peace, security and development was now considered to be of primary concern in fragile situations.

Given that the EU, together with its member states, constitutes the world's largest development assistance and humanitarian aid donor, providing more than €1 billion annually, there is great potential to address climate security issues through this assistance.[182] This is to some extent done through various financial instruments, such as the Instrument contributing to Stability and Peace (IcSP). In comparison to its predecessors, the IcSP does not primarily focus on short-term crises such as early recovery after natural disaster or support for post-conflict political stabilization.[183] Instead, this revised instrument puts greater emphasis on so-called 'stable situations' with a long-term component, in addition to 'situations of crisis' which are more short-term. In stable conditions, the IcSP aims to help third countries build the capacity to address specific global and trans-regional threats. These include climate change, which is stated as having a 'destabilising impact on peace and security'.[184] Thus, efforts are being made to complement the more immediate crisis response strategies with preparedness and preventive

[180] Council of the European Union, European Union Programme for the Prevention of Violent Conflicts. 2001, 9537/1/01 rev.1, section 12.

[181] European Commission, 'Towards an EU response to situations of fragility: engaging in difficult environments for sustainable development, stability and peace', Communication from the Commission to the European Parliament, the Council, the European Economic and Social committee and the Committee of the regions, COM (2007) 643 final, p. 5.

[182] The document was followed up by Council conclusions stating that 'preventing and addressing situations of fragility' include 'climate change and migration issues'. Council of the European Union, Council Conclusions on a EU response to situations of fragility, Press release, 2831st External Relations Meeting, Nov. 2007.

[183] Earlier mechanisms were the Rapid Reaction Mechanism, created in 2001, and the Instrument for Stability, created in 2006.

[184] European Parliament and Council of the European Union, Establishing an Instrument Contributing to Stability and Peace, Legislative Act. Regulation (EU) no. 230/2014.

action, while at the same time promoting a security and development nexus where the EU's policy frameworks converge.

An example of this convergence can be found in the EU's contribution to the Millennium Development Goals, and even more so in the accelerated progress up to 2015 to establish their successors—the SDGs in Agenda 2030.[185] A Communication from the Commission states that eradicating poverty and ensuring that prosperity and well-being are sustainable are two of the most pressing challenges of our time that cannot be dealt with separately.[186] Instead, the Commission urges a unified policy framework that is also closely related to governance, human rights, and peace and security issues. In the aftermath of the European Council, the EU called for a single overarching framework on poverty eradication and emphasized that policy coherence needs to be enhanced across all sectors to achieve poverty eradication and sustainable development.[187] These initiatives have been followed-up on an annual basis since 2013, with greater precision and better operationalization of the suggestions made for improving policy coherence between development, conflict prevention and climate action. Nonetheless, according to Richard Youngs, these issues—economic, social and environmental sustainability—remain surprisingly separate, suggesting that conflict prevention is being carried out in a 'strategic void'.[188]

The lack of strategic guidance is also a key theme in the third related policy area—the comprehensive approach—in which climate change is potentially connected with a military response.

THE COMPREHENSIVE APPROACH

The notion of a comprehensive approach to security can be traced back to at least the European Security Strategy of 2003. Adopting the notion of a post-cold war setting in which new and multifaceted situations of insecurity had emerged, the strategy concluded that 'none of the new threats is purely military' and what was needed was a 'mixture of instruments'.[189] Military instruments might for example be needed to restore order, whereas humanitarian means would be needed to tackle an immediate crisis before political and long term solutions could be put

[185] United nations, General Assembly, Transforming Our World: The 2030 Agenda for Sustainable Development, A/RES/70/1, 25 Sep. 2015.

[186] European Commission, 'A Decent Life for All: Ending Poverty and Giving the World a Sustainable Future', Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the regions, COM (2013) 92 final, 2013.

[187] Council of the European Union, the Overarching Post-2015 Agenda: Council Conclusions. 11559/13, 2013.

[188] European Commission, 'A Decent Life for All: from vision to collective action', Communication from the Commission to the European Parliament, the Council, the European Economic and Social committee and the Committee of the regions, COM (2014) 335 final; Council of the European Union, Council conclusions on a transformative post-2015 agenda, Press release, General Affairs Council 16 Dec. 2014; European Commission, 'A Global Partnership for Poverty Eradication and Sustainable Development after 2015', Communication from the Commission to the European Parliament, the Council, the European Economic and Social committee and the Committee of the regions, COM (2015) 44 final; Council of the European Union, A New Global Partnership for Poverty Eradication and Sustainable Development after 2015, Council conclusions, 9241/15; and Youngs, R., *Climate Change and EU Security Policy: an Unmet Challenge* (Carnegie Europe: Brussels, 2014), p. 9.

[189] Council of the European Union (note 174), p. 7.

in place. The comparative advantage of the EU is often said to be its ability to address complex issues through a wide range of policy tools, as the comprehensive approach suggests.

The negative effects of climate change, with its non-antagonistic, cross-sectorial and long-term characteristics, stand as an example of a global issue that requires a comprehensive response. In a 2013 report by Catherine Ashton, the then High Representative, climate change is framed as one of the new security threats at the national and international levels. Responding to this, and other types of new threats, would require a further development of the comprehensive approach so that conflict prevention, crisis management and stabilization are integrated 'in a strategically coherent and effective manner'.[190] One way of achieving this is to build on successful concrete examples, such as the EU's Strategic Framework for the Horn of Africa.[191] During the planning of this mission, climate change was seen as posing an 'additional challenge to all countries in the region', that required the integration of climate change into development strategies.[192]

How can the concept of a comprehensive approach be used in practice? According to the conclusions from the May 2014 European Council, 'the comprehensive approach is both a general working method and a set of concrete measures and processes to improve how the EU, based on a common strategic vision, … can deliver more coherent and more effective policies'.[193] Nonetheless, the EU is not a strategically coherent foreign policy actor. A vast number of institutional and procedural shortfalls have prevented coherent EU external action and, according to a report by the European Parliament, in some cases have even damaged its 'credibility as a global actor and security provider'.[194] One reason for this, according to the report, might be the lack of coordination and cooperation between the Commission's humanitarian aid and civil protection (ECHO) and the EEAS. However, the ambition to link civilian and military means has been the subject of much academic discussion.[195] This debate has a high profile within the EU as well. A report by the European Parliament emphasizes the role of the CSDP in addressing the impacts of climate change and the risk of a 'militarization' of the EU's climate policy.[196] It argues that natural disasters exacerbated by climate change are highly destabilizing, particularly for vulnerable states, and that these complex crises should be prevented by 'applying a comprehensive approach including the CSDP'.[197] However, the report also includes a minority opinion by several

[190] European Union External Action Service, Preparing the December 2013 European Council on Security and Defence, Final Report by the High Representative/Head of the EDA on the Common Security and Defence Policy, Oct. 2013, p. 3.

[191] Council of the European Union (note 138).

[192] Council of the European Union (note 138), p. 4

[193] Council of the European Union, Council conclusions on the EU's comprehensive approach, Press release, Foreign Affairs Council, 12 May 2014, p. 1.

[194] European Parliament, 'On the EU comprehensive approach and its implications for the coherence of EU External Action', Committee for Foreign Affairs, 2013/2146(INI).

[195] For an overview, see Liberatore (note 118).

[196] European Parliament, 'On the role of the Common Security and Defence Policy in case of climate-driven crises and natural disasters', Committee for Foreign Affairs, 2012/2095(INI).

[197] European Parliament (note 196), p. 5.

Members of the European Parliament who are concerned about the EU leaning towards a 'systematic implementation of military elements into climate policy' and that closer coordination between civil and military assets and capabilities risks ignoring 'the underlying root causes of global distributive inequality'.[198]

Furthermore, despite the possible efficiency gains, the use of military and civilian defence assets in a humanitarian policy space would also complicate the guiding principles of humanitarian agencies: neutrality, impartiality and independence.[199] In conclusion, the structure of recent CSDP missions and the absence of climate change from discussions among, for example, the EU Military Staff, suggests that such a militarization process appears a distant prospect.[200] In conclusion, merging climate change and security does not have to be achieved by impressing security aspects on to climate policies, but rather, as Oels notes, by assessing how a 'climatization' of defence, migration and development policy might result in better coordination and more holistic responses to addressing climate-related security risks.[201]

This section has illustrated that there is no lack of political ambition within the EU to address climate security, which has been translated into a vast range of official EU documents. The next section 3.3.2 probes deeper into how practitioners in the EEAS respond to the challenges they encounter when trying to translate political ambition into projects to address this complex issue.

3.3.2. Obstacles to achieving an integrated and efficient EU response

EU responses to climate change have been fine-tuned in the past decade but are still a work in progress. Based on interviews with experts in the EEAS and other parts of the EU system, this section suggests that the mandate for the EU to address climate security is still unclear, and that the EU's responses to climate-related security risks could be improved by: (*a*) facilitating integration within the EU in a straightforward *strategy on climate security;* (*b*) aligning *more resources to thematic expertise*; and (*c*) continuing to *develop and integrate climate factors into conflict prevention tools*.

LACK OF STRATEGIC GUIDANCE LIMITS INTEGRATION

Crisis management, multilateralism, thematic analysis and geographical coverage are equally important to a comprehensive approach to climate security. However, a comprehensive approach should be understood as a method, not a strategy; and does not specify how the EU should respond, but instead presents a platform for cooperation.[202] Despite several initiatives on policy coherence between, for example, development, security and climate action, the EU is still divided into silos,

[198] European Parliament (note 196), p. 13

[199] Kennedy, D., *Military-Humanitarian Integration: The Promise and the Peril*, Briefing Paper (Finnish Institute of International Affairs: Helsinki, 2009).

[200] Youngs (note 170), p. 77.

[201] Oels (note 106), p. 27.

[202] Interview with a former EU ambassador, 5 Mar. 2016.

and practitioners still mainly think and act in terms of their own mandate and territory. An updated security strategy that describes why and in what cases the EU should engage in climate security could thus contribute to a more coherent EU response. As such, expectations among practitioners are high that the forthcoming EU Global Strategy on Foreign and Security Policy will place climate change in a strategic context. This is thought to be especially important for acknowledging the linkages between climate change, environmental degradation and migration.[203]

In the absence of such a strategy, the ongoing debate will be dominated by issue-specific discourses and 'conceptual confusion', for example, pertaining to fragility, resilience, human security and military defence.[204] This will have implications for the use of political tools, in terms of overlapping mandates and duplication of work among various parts of the EU. One way forward will be to engage in practical projects in regions where climate change will have more profound consequences for security risks. Development in the Arctic region, migration to the EU and fresh water scarcity in the EU's neighbourhood are some examples of issues that require an integrated response.

One often mentioned project is the joint EU-UNEP Initiative on Climate Change and Security, financed under the IcSP.[205] This project, with an estimated total cost of €5.4 million, is the first action under the IcSP to address the global and trans-regional effects of climate change that have a potentially destabilizing effect on fragile states. The results from this project are difficult to foresee, given the limitation of only two case studies. Some respondents suggest that the aim of outlining theoretical linkages on how climate change affects fragile states is likely to be unfulfilled, and that a better approach would be to highlight how different bodies can cooperate, both within the EU and between the EU and national actors in affected countries. Such a study would preferably focus on water and its linkages to security, with a geographic focus on South East Asia rather than Africa, since the cross-fertilization that the current EU-UNEP project is aiming for would require much more coordination between, for example, the EEAS and DG Devco.[206]

Another possibility for improving coordination within the EEAS, as well as between EU institutions, may come from the work on implementing Agenda 2030 and the EU's contribution to achieving the SDGs. Climate change would in this case be a good starting point for breaking down institutional walls and bridging previously separate policy silos.[207] Reaching these SDG's would require experts

[203] Group interview with EEAS representatives, 28 Jan. 2016. For an overview of the process behind this strategy see Missiroli, A. (ed), *Towards an EU Global Strategy* (European Union Institute for Security Studies: Paris, 2015).

[204] Interview with EEAS representative, 22 Mar. 2016.

[205] European Commission, Funding for the Instrument contributing to Stability and Peace: Global and trans-regional threats. Commission Implementing Decision on the Annual Action Programme 2015, IcSP/2015/037-982.

[206] Interview with EEAS representative, 4 Mar. 2016.

[207] Interview with EEAS representative, 10 Feb. 2016.

from various policy areas to sit down together in an integrative manner to discuss the potential risks that societies face in the light of climate change.

INSUFFICIENT RESOURCES AND PRIORITY TO ADDRESS CLIMATE SECURITY

There is a concern that preventative efforts and upstream strategies receive less attention and fewer resources than immediate crisis response and geographical coverage.[208] Approximately two-thirds of the analytical staff members at the EEAS are assigned to the geographical desks, which are in turn supported by the thematic expertise. Furthermore, when the EEAS receives additional resources, these are primarily used to strengthen EU delegations, while other parts of the organization must deal with a growing number of issues with the same, or even fewer, resources. This seems to have been the case in the months before the Paris Climate Conference, when a lot of attention was paid to climate diplomacy while other aspects of climate change were given lower priority.

Thus, the personnel problem within the EEAS is arguably much more important for resolving the difficulties in addressing climate security than the institutional set-up of the EU. While the mandate and expertise exist today, given the spatial and temporal complexity of climate change, additional immediate and emerging issues will demand extra dedicated resources. The present analysis and policy work within the EEAS identifies a need to take the implications of climate change into account at an early stage. This will require a strengthening of the thematic units dealing with conflict prevention and climate change.

DISAGREEMENTS ON THE EFFICIENCY OF CONFLICT PREVENTION AND EARLY WARNING

Two overarching questions are pivotal to the EU's conflict prevention efforts. First, does the EU have a comparative advantage, in the sense that it contributes something unique and more effective than any other institution involved? Second, are there EU interests at stake, in terms of a positive or negative outcome for the EU in getting involved? With regard to the second question, it is important to keep in mind that involvement could affect other EU relations and it is therefore crucial to analyse the context.

During the interviews with EU officials, it became clear that there is discord within the EEAS about the answers to these guiding questions and on the efficiency of the EU's conflict prevention with regard to climate security. On the one hand, long-term indicators such as those used in conflict early warning systems (see box 3.2) are seen as having made a small contribution to the work on climate security, which was said to have been better addressed by practical projects dealing with a limited thematic focus in a specific geographical region. The reason for the lack of interest in early warning systems, not only for addressing climate security but also as a tool for conflict prevention as a whole, is that the EU is poorly suited to doing this kind of data collection and mapping, which requires a physical

[208] Interview with EEAS representative, 22 Mar. 2016; and Interview with EEAS representative, 28 Jan. 2016.

Box 3.2. Integrating the climate into conflict early warning systems

The EEAS was given a mandate to develop a conflict early warning system in 2011. The data used in the system is collected through a variety of sources, including open-source quantitative conflict data used in the Global Conflict Risk Index, as well as data from, for example, the EU Intelligence and Situation Centre (INTCEN), the Fragility and Resilience Unit at DG Devco and the global network of EU delegations. The system is built on a checklist of 'structural risks of conflict' and consists of 25 indicators arranged under five categories: political, social cohesion, conflict prevalence, economic and geographical/environmental. Climate change is integrated based on several indicators, such as: the capacity to respond to disasters, management of the effects of climate change, and investment in natural resources. One factor gaining particular interest is freshwater availability.

Source: Council of the European Union, Conflict Prevention, Council Conclusions 2011 11820/11.

presence in the affected areas. As a consequence, this sort of analysis would preferably be outsourced to other actors, while the EEAS could put the information into practice, which is more in line with its mandate. On the other hand, there seems to be a culture of neglecting upstream and strategic thinking in some parts of the EEAS, resulting in a situation in which projects dealing with acute crises are prioritized. As a result, the more strategic outputs are not always implemented by the geographical desks, which are already congested with more urgent issues. In addition, more work needs to be put into 'in-house activism' since the EEAS, along with the EU and its member states, tends to favour more immediate crisis response rather than long-term preventive efforts.[209]

To conclude, this section has outlined a framework for the EU to address climate-related security risks and showcased how climate change, in a post-Paris setting, might facilitate integration and coherence between distinct policy areas. Achieving this, however, will require not only the setting of a strategic direction, but also overcoming differing opinions concerning the EU's role as a global crisis manager and its mandate to address emerging security risks in a comprehensive manner, including the use of military and civilian defence assets. Section 3.4 continues the discussion on the need for integration, but with a focus on experiences made in three national development organizations.

[209] Group interview with EEAS representatives, 4 Mar. 2016; and Interview with EEAS representative, 22 Mar. 2016.

3.4. Integration of climate and conflict risks by national development organizations

There is a growing consensus among practitioners and scholars that combined climate, conflict and fragility risks require integrated approaches.[210] Development organizations have also recently started to integrate the security implications of climate change into high-level policies. However, the translation of high-level policies into geographical strategies and programming has often proved a challenge for national development organizations. This section focuses on how two specific national development organizations have addressed combined climate and conflict risks in their policies; and how they have dealt with the challenges to implementing these policies in their programmes.[211] The two organizations are: the German Society for International Cooperation (GIZ); and the Department for International Development (DFID) in the UK. The empirical material used for the analysis consists of the organizations' formal policies and strategies, and semi-structured interviews with staff members.[212]

Moreover, while integrated approaches are undoubtedly required in most fields of development cooperation, this section focuses on two forms of integration identified in the literature as particularly relevant to effectively addressing combined climate and conflict risks: the integration of climate risks into peacebuilding efforts and the need to apply a conflict-sensitive approach in climate change programmes. This is called *climate-resilient peacebuilding* and *conflict-sensitive climate change programming* in the literature.[213] The ways in which the DFID and GIZ have dealt with these two processes of integration in their policies and strategies are summarized below.

3.4.1. Climate-resilient peacebuilding

As discussed in chapter 2, increased stress on livelihoods and the unequal distribution of resources are well-known drivers of conflict if local communities lack the capacity to adapt to those changes. Hence, the core element in climate-resilient peacebuilding is to take both short- and long-term climate risks into consideration as potential drivers of conflict.[214] In addition, to prevent the emergence of new tensions or the intensification of ongoing conflicts, it is important to work

[210] Rüttinger et al. (note 12); Vivekananda et al. (note 107).

[211] When we talk about combined climate and conflict risks we refer to conflicts of relevance for peacebuilding efforts. This is because our interest is primarily related to climate-resilient peacebuilding, and conflict-sensitive climate programming.

[212] This section builds on Gustafsson (note 1). See that report for more information regarding our methodological and analytical approach, as well as more extensive references. Gustafsson's report also encompassed an analysis of the Dutch MFA.

[213] Crawford, A. et al., 'Promoting climate-resilient peacebuilding in fragile states' (International Institute for Sustainable Development: Geneva, 2015), p. 1; Vivekananda et al. (note 107), p. 495; and Dabelko, G. D., *Backdraft: The Conflict Potential of Climate Change Adaptation and Mitigation* (Wilson Center: Washington, DC, 2013).

[214] Crawford et al. (note 213); see also Matthew, R. and Hammill, A., 'Peacebuilding and adaptation to climate change', eds D. Jensen and S. Lonergan, *Assessing and Restoring Natural Resources in Post Conflict Peacebuilding* (Earthscan: London, 2012); and Matthew, R., 'Integrating climate change into peacebuilding', *Climatic Change*, vol. 123, no. 1 (2014), pp. 83–93.

proactively to assess potential risks and adopt the necessary mitigation and/or adaptation measures. For development actors involved in peacebuilding, this means they must start paying attention to climate risks in their work and considering how such risks could be addressed in practice. Some of the key policies, strategies and procedures in DFID and GIZ are outlined below.

INTEGRATION OF CLIMATE RISKS INTO PEACEBUILDING POLICIES AND ANALYTICAL TOOLS

In the high-level policies of both Germany and the UK, climate change is considered a factor that could increase the potential for conflicts. In the German 2013 Peace and Security strategy, climate change is described as one of the factors that might 'trigger and perpetuate fragility and violence'.[215] Similar formulations can be found in the Building Stability Overseas strategy published by the UK.[216] Despite the fact that the linkages between climate change and conflict are outlined in these policies, neither DFID nor GIZ require climate risks to be specifically addressed in conflict analyses, early warning systems or country strategies. In some cases, staff members reported having included climate risks in conflict analysis and country strategies at their own initiative.[217] However, without mandatory requirements, efforts to integrate climate risks are very much left to the commitment and capability of the employees responsible for such analyses. An important shortcoming in this regard, according to interviewees, is that there are relatively few staff members with competence on climate issues in the examined organizations' Peace and Conflict units.[218]

The most important consequence of disregarding climate risks in conflict analysis is that it could hamper conflict prevention. The risk is greatest in countries that are heavily affected by climate change and at the same time suffer from fragile governance structures, low intensity tensions and insecurities. Several interviewees suggested that it is in those countries that it is most important to pay attention to how different impacts of climate change, such as unequal access to resources, migration and rapid urbanization, can reinforce existing tensions or create new ones. Hence, introducing climate risks into early warning and conflict assessments would be an important first step towards improving conflict prevention in those countries.

CLIMATE PROOFING AS A STRATEGY OF INTEGRATION

Climate proofing has the two-fold aim of assessing the extent to which a policy or programme is exposed to risks associated with climate change or variability and the extent to which the programme itself could increase vulnerability to climate change. DFID and GIZ have both adopted systems for climate proofing that follow this logic. However, DFID opted to withdraw its climate-proofing system

[215] BMZ, Development for Peace and Security: Development Policy in the Context of Conflict, Fragility and Violence (BMZ: Bonn, 2013), p. 12.

[216] DFID, Defining Disaster Resilience: A DFID Approach Paper (DFID: London, 2011), p. 10.

[217] Group interview with representatives from the Stabilisation Unit (UK), 6 Jan. 2016.

[218] Interview with an employee at DFID, 23 Dec. 2016.

in 2014 due to the time and resources required to implement the system properly. In both DFID and GIZ, climate proofing has helped raise awareness of climate change within their respective Peace and Conflict units. However, in an evaluation of DFID's projects in three countries, it was found that even though climate risks were recognized in 88 per cent of projects, additional action to manage the expected risks was only included in 30 per cent of those projects.[219] A crucial consideration, therefore, is the extent to which identified climate risks are acted on and lead to changes in project design. Procedures for monitoring and follow-up throughout a project's life cycle play a fundamental role. Interviewees from DFID described follow-up mechanisms as relatively inefficient, while some informants from GIZ described these procedures as rigorous but cumbersome.[220]

Moreover, an important limitation of how climate-proofing strategies are designed in both organizations is that they primarily ensure compliance with the 'do no harm' principle. There is no requirement for programmes to be modified in order to contribute positively to peacebuilding processes. Hence, unless the requirements related to climate proofing are modified, they will need to be complemented by other integration strategies.

3.4.2. Conflict-sensitive climate change programming

There is a growing literature on the consequences of global climate mitigation and adaptation policies at the local level. This literature demonstrates how well-intended policies that lack sensitivity to local contexts can increase the risk of violent conflict as well as the vulnerability of certain populations.[221] Against this background, several studies suggest that in order to address combined climate and conflict risks, it is necessary for climate change programming to take conflict risks into account. Hence, the overarching goal of conflict-sensitive climate change programming is that responses to climate change should not increase the risk of conflict, and in the best case even help to strengthen peacebuilding processes.[222] The key policies and strategies, and existing procedures for implementing conflict-sensitive approaches within DFID and GIZ are outlined below.

[219] Ranger, N., Harvey, A. and Garbett-Shiels, S. L., 'Safeguarding development aid against climate change: evaluating progress and identifying best practice', *Development in Practice*, vol. 24, no. 4 (2014), pp. 467–86.

[220] Interview with employee at DFID, 5 Jan. 2016; Interview with an employee at GIZ, 23 Mar. 2016; and Interview with an employee at GIZ, 9 Feb. 2016.

[221] Tänzler, D., Maas, A. and Carius, A., 'Climate change adaptation and peace', *Wiley Interdisciplinary Reviews: Climate Change*, vol. 1, no. 5 (2010), pp. 741–50; Bumpus, A. G. and Liverman, D. M., 'Accumulation by decarbonization and the governance of carbon offsets', *Economic Geography*, vol. 84, no. 2 (2008), pp. 127–55; Fairhead, J., Leach, M. and Scoones, I., 'Green grabbing: a new appropriation of nature?', *Journal of Peasant Studies*, vol. 39, no. 2 (2012), pp. 237–61; Marino, E. and Ribot, J., 'Adding insult to injury: climate change and the inequities of climate intervention', *Global Environmental Change*, vol. 22, no. 2 (2012), pp. 323–28; and Ojha (note 5).

[222] Crawford et al. (note 213), p. 1; and Babcicky, P., 'A Conflict-sensitive approach to climate change adaptation', *Peace Review*, vol. 25, no. 4 (2013), pp. 480–88, p. 486.

CONFLICT SENSITIVITY IN RESILIENCE AND VULNERABILITY ASSESSMENTS

Resilience and vulnerability are the most common frameworks used by development organizations for their climate-related activities. DFID has put great efforts into incorporating resilience into its work, and this is clearly reflected in its high-level policies.[223] DFID proposes the use of resilience as an overarching framework for integrating climate change with humanitarian aid, poverty reduction and peacebuilding.[224] In contrast, GIZ uses vulnerability assessments as the analytical tool for its climate change programming and does not have the same ambition to integrate different policy areas under this framework.

Resilience and vulnerability methods are intended to identify risks and strengthen adaptation and development planning. While both approaches include socio-economic conditions, neither incorporates the conflict dimension. There are various explanations for this. First, as one interviewee suggested, the resilience framework is already complex and including additional dimensions such as conflict would make it even more difficult to operationalize.[225] Second, resilience approaches are primarily designed to address disaster risks or external shocks and since conflict is an internal social process in a society, the basic idea in resilience approaches of 'bouncing back from [external] shocks or stresses' is difficult to apply. Instead, sustainable peace requires some kind of transformation of internal conflict structures.[226] Adopting 'resilience' as a framework for implementation of integrated approaches raises important questions regarding how to adapt this methodology in order to ensure that conflict and fragility are properly addressed. The vulnerability assessment approach used by GIZ is also a separate tool from conflict analysis, and thus suffers from similar problems. Without integrating conflict risks into their assessments, the two organizations are thus unlikely to be able to address combined conflict and climate risks in a consistent manner.

CONFLICT PROOFING CLIMATE PROGRAMMING

In addition to the importance of including careful analysis of the conflict dimension in resilience and vulnerability assessments, there is also a related debate regarding the risk of maladaptation. Simply put, the argument goes that if climate programmes are not conflict-sensitive, they could themselves have negative impacts on land tenure and marginalize certain groups, and perhaps make conflict more likely.[227] In both DFID and GIZ, there are guidelines on how to ensure the

[223] Interview with an employee at DFID, 6 Jan. 2016; and DFID and UKAID, *UK Government's Humanitarian Policy, Saving Lives, Preventing Suffering and Building Resilience* (DFID and UKAID: London, 2011).

[224] DFID (note 216).

[225] Interview an employee at DFID, 6 Jan. 2016.

[226] McCandless, E. and Simpson, G., *Assessing Resilience for Peacebuilding: Executive Summary of Discussion Document* (Interpeace and Sida: Geneva/Stockholm, 2015).

[227] Tänzler, D. and Ries, F., 'International climate change policies: the potential relevance of REDD+ for peace and stability', eds J. Scheffran et al., *Climate Change, Human Security and Violent Conflict: Challenges for Societal Stability* (Springer: Berlin, 2012); Patel, T. et al., 'Predicting future conflict under REDD+ implementation', *Forests*, vol. 4, no. 2 (2013), pp. 343–63; Brown, H.C.P. et al., 'Institutional perceptions of opportunities and challenges of REDD in the Congo Basin', *Journal of Environment and Development*, vol. 20, no. 4 (2011), pp. 381–404; Borras Jr, S. M., McMichael, P. and Scoones I., 'The politics of biofuels, land and agrarian change: editors' introduction', *Journal of Peasant Studies*, vol. 37, no. 4 (2010), pp. 575–92;

conflict sensitivity of development programming in conflict-affected and fragile states. While these procedures are very important, staff members reported that they often need to balance many different priorities. Hence, without support from help desks or expert groups, it can be challenging for staff members to use these tools to develop entirely conflict-sensitive projects.[228]

3.4.3. Important factors for effective integration

The above analysis of DFID and GIZ clearly shows that while there are some high-level policies on the links between climate change and security, these links are not integrated systematically into analytical tools and implementation procedures. This section sets out three important factors for strengthening effective integration of climate and conflict risks.

POLITICAL LEADERSHIP AND KNOWLEDGE

It is clear that lack of clarity and operationalization of these high-level policies (on the links between climate change and security) into concrete guidelines are important factors that prevent them from becoming translated into concrete actions. In both Germany and the UK, climate and security have periodically been used as a powerful discourse for persuading conservative political forces within the government to increase their support for climate negotiations. However, this strategic policy discourse has not necessarily been translated into concrete strategies or programming. In these two cases, lack of sustained political leadership over time and lack of knowledge seem to be important explanations. However, even though the impacts of climate change involve some inherent uncertainties, there is substantial knowledge on what factors that decrease or increase security risks posed by climate change. These factors must be taken into account in existing methodologies and planning processes. This requires political leadership and resources, and the processes themselves require expertise that is often lacking in national development organizations. For instance, it is important to include advisers with competence in climate-related security risks in different kinds of development processes and provide education on the subject for staff members. External expert units and consultancies could also play an important role in providing long-term expertise and support.

INTERNAL ORGANIZATIONAL STRUCTURES

Climate-related security risks are addressed in various policy areas that in many cases are widely separated. Each actor has its own organizational structure and culture, which affects how it interprets and implements policy. As a consequence,

Dauvergne, P. and Neville, K. J., 'Forests, food, and fuel in the tropics: the uneven social and ecological consequences of the emerging political economy of biofuels', *Journal of Peasant Studies*, vol. 37, no. 4 (2010), pp. 631–60; Molony, T. and Smith, J., 'Biofuels, food security, and Africa', *African Affairs*, vol. 109, no. 436 (2010), pp. 489–98; Vermeulen, S. and Cotula, L., 'Over the heads of local people: consultation, consent, and recompense in large-scale land deals for biofuels projects in Africa', *Journal of Peasant Studies*, vol. 37, no. 4 (2010), pp. 899–916; and Gasparatos, A., Stromberg, P. and Takeuchi, K., 'Sustainability impacts of first-generation biofuels', *Animal Frontiers*, vol. 3, no. 2 (2013), pp. 12–26.

[228] Interview with an employee at GIZ, 9 Feb. 2016.

the initial intention of policy may be lost in the implementation process. For instance, if one department is responsible for implementation, there is a risk that it will interpret the policy from its own perspective and try to fit it in into its 'normal way of doing things'. For instance, if a Department of Climate or Environment is given the responsibility for developing the resilience framework, it is likely to result in a lack of attention to the conflict dimension and vice versa. As suggested by Crawford et al., it might therefore be important to create new forms of coordination between policy areas for sharing knowledge, developing joint risk analyses and coordinating actions.[229] However, even when new institutional structures for coordination between policy communities are created, it is important to reflect on the perspectives represented. Our analysis has shown that external expert units could contribute to coherence and sustainability over time. Nonetheless, coordination and steering of projects should preferable remain within the national development organization.

MEASURES FOR SUPPORT AND CONTROL

The level of support for and administrative control of staff members is a third important factor for ensuring effective implementation. It emerged from the analysis in this study that staff members need to be supported in their work and that effective mechanisms for follow-up and monitoring of results need to be put in place to ensure compliance. It is primarily in relation to mainstreaming strategies that concrete forms of support and administrative control currently exist.

In GIZ, informants describe that climate proofing has been a high-profile theme and significantly more resources have been invested in making these procedures work compared with conflict proofing. For instance, there are accessible help desks, internal campaigns and follow-up procedures for ensuring climate proofing. Staff members reported great pressure to implement climate proofing procedures, but also that they received good support. Until 2014, DFID had a similar system, with a special unit of climate and environmental advisers who revised and approved each project. However, within DFID informants describe the follow-up procedures as less rigorous. This meant that even though climate risks were identified in many projects, it did not result in any project changes to address these risks. It is therefore important to ensure that staff members have the necessary capabilities and that they are committed to implementing the policy.

Staff members' capabilities and commitments could be enhanced using training courses and internal campaigns, through which the relevance for each team is explained. It must also be acknowledged, however, that assessments of climate or conflict risks can be difficult to perform, and there may be a need for specialist expert units that could offer support with project development and monitoring projects. It is also important to strengthen effective follow-up procedures. If climate risks have been identified in a project, it is important to ensure that measures are taken to adapt that project accordingly.

[229] Crawford, A. et al. (note 213).

To conclude, this section has contributed an analysis of incipient attempts to integrate combined climate and conflict risks within DFID and GIZ. We believe that the analysis of the advantages and drawbacks associated with different integration strategies offers useful information for assessing the value of current Swedish strategies in this regard, but also for other countries' national development organizations. We conclude this chapter by reflecting on how policy responses to climate-related security risks could be improved at a more general level.

3.5. Concluding remarks and policy implications

This chapter has focused on how impacts of climate change have been integrated into international, regional and national organizations. Given that the examined organizations have different focuses, the framing and institutional responses to climate-related security risks differ widely. One of our main arguments is that there is a need for better coordination of this diversity of responses in order to create synergies and avoid unnecessary overlaps. Isolated responses run the risk of being ineffective and even counterproductive. Hence, a common theme of this chapter has been to describe and promote the use of *integrated responses* to climate-related security risks.

The case studies presented above show that this is a relatively new field. While many organizations have adopted ambitious policies, they are still in different stages of developing institutional responses. In this section, we have identified a number of important lessons that could be learnt from these incipient attempts to deals with climate-related security risks. First, we discuss some concrete tools and integration strategies, and then address some broader issues related to coordination across policy communities.

3.5.1. Mainstreaming strategies as a complementary tool

Mainstreaming strategies, in the sense of integrating climate factors and climate risks into existing analytical tools or projects, has the advantage of raising awareness of any given issue. Human rights and gender issues are often mentioned as successful examples of previously ignored issues gaining increased attention after being mainstreamed. As discussed in relation to national development organizations, a general limitation of mainstreaming strategies—given that they often follow a 'do no harm' logic—is that they do not necessarily ensure more positive outcomes. Mainstreaming, therefore, needs to be complemented by other integration strategies, such as better processes for supporting and evaluating climate-sensitive projects for conflict prevention, strengthening the competence around climate-related risks and providing incentives for prioritising climate factors. Mainstreaming strategies also need to be flexible, particularly since climate risks are not relevant in all kinds of projects. Overall, this calls for reflection upon when and how mainstreaming strategies should be applied.

3.5.2. The importance of merging analytical tools

Our analysis shows that the right expertise and proper analytical tools are essential for responding effectively to climate-related security risks. Within both DFID and GIZ, climate programming and peacebuilding efforts are largely dealt with using separate analytical tools that are unlikely to be able to capture the different security risks that interact with each other. It is important, therefore, to develop analytical tools that can help overcome organizational silos, and increase synergies between the efforts of different policy communities. One way of doing this is to facilitate cooperation between researchers and practitioners in planning and implementing projects in context-specific settings. By integrating theoretical knowledge with practical experiences, the process can become iterative and create new ways of addressing present and emerging risks. To avoid reinventing the wheel, it is also important to review the methods currently under development.

3.5.3. 'Climatization' rather than securitization

The present analysis indicates that the inability to achieve policy coherence on climate security might be the result not just of institutional barriers or a lack of resources, but also of conflicting guiding principles and deliberate efforts to keep climate action and development separate from the security domains. For example, in contrast to the EU's security and defence policies, humanitarian aid is based on need and is as such less politicised. Thus, responding to climate-related security risks requires sensitivity to the delicate ties between political, economic or military goals to avoid compromising the underlying principles of impartiality and neutrality that are central to aid. Rather than adding a security dimension onto existing efforts on climate action—and thus imposing security aspects onto climate policies—a more fruitful way forward would be for organizations involved in national and international security to identify the ways in which climate change not only exacerbates existing trends, but also creates new situations of insecurity.

3.5.4. Improve coordination across policy areas

Climate change provides a good starting point to address the trans-boundary challenges of modern society and requires policymakers to start thinking more in terms of risks and prevention rather than emergency responses. Initiatives such as Agenda 2030 could act as an important platform for integrating various policy areas. A general conclusion to be drawn from our analysis is that strategic guidance is crucial to achieving coordination between policy areas, not least due to the conceptual confusion that has emerged in the absence of such strategies, with actors referring to 'fragility', 'resilience', 'comprehensive security' or 'strategic interests', and not necessarily with any clear understanding of the interplay between them. Achieving an integrated approach does not mean that all the actors involved with climate change should start analysing its national or international security implications. It does imply, however, that the actors involved in human as well as state security should be given a mandate to work with the strategic relevance these implications could have, and to articulate proper responses to them.

At the national development organizational level, our two case studies show that if policy areas are managed by the same department, or by a specially created steering group, coordination becomes significantly easier. The case studies also show the need for firm leadership and the provision of incentives to overcome policy silos, which is necessary in the development of integrated approaches.

4. Towards an integrated approach

This final chapter synthesizes the analysis contained in this report. It focuses on findings that suggest practical measures for policymakers and practitioners to strengthen the integration of climate-related security risks into their work. Section 4.1 summarizes the analysis and presents three major conclusions: the need to identify concepts that reconcile different discourses (section 4.1.1); the need to develop organizational structures and strengthen coordination (section 4.1.2); and the need to enhance systematic and relevant knowledge (section 4.1.3). The suggestions presented in these sections are generic in character and thus of relevance to a variety of organizations that face climate-related security risks in their work. However, since the report has been produced in a Swedish policy context, the concluding section makes some concrete suggestions that are appropriate to Sweden.

4.1. Managing climate-related security risks

This report starts from the concept of climate-related security risks, a concept that focuses on the need for researchers and policymakers to take account of the multifaceted character of climate risks (section 2.1). This involves a recognition that the security risks posed by climate change: (*a*) have different consequences, affecting water security, food security, conflicts and so on; (*b*) are manifest in different time-scales, ranging from the short-term to the long-term; and (*c*) involve different forms of security risks, from human to state security. The multifaceted character of climate-related security risks highlights the need to pay attention to the approaches taken in the analysis and how they affect the outcome. Moreover, this multifaceted character also means that the risks are relevant to a diverse range of actors' mandates and areas of expertise.

Thus, climate-related security risks are addressed, and will continue to be addressed, in numerous ways. Nevertheless, since many of these security risks are also linked to each other, a bridge is needed between the different approaches. Responses in one area can also affect other areas. To respond properly to climate-related security risks, therefore, we need to address this interplay so that measures taken reduce insecurities. This lies behind the choice of a risk-based approach recognising the multifaceted and multidimensional character of climate risks and the call for 'integrated approaches' as a way to respond to these risks. The above analysis has highlighted some suggestions on how climate change and security can be integrated. These are summarized in the three sections below.

4.1.1. Identifying common concepts and reconciling different discourses

Some researchers and policy areas refrain from talking about security in relation to climate change, despite the evidence of the immense impact climate change has

already had, and will progressively have, on human security.[230] One partial explanation for this could be that security is often linked to *threats* rather than *risks*, and is often accompanied by calls for military responses (sections 2.1 and 3.1). We have started from *a comprehensive security approach* (section 2.1) that emerges from human security, but also recognizes other security dimensions such as communal security, state security and international security, and how they are interrelated. We do so because we believe that it is relevant to talk about security risks in relation to climate change. Climate change undermines human livelihood and well-being, affects the drivers of violent conflict and alters territories. Nonetheless, since security can be analysed from different angles and through different timeframes, it is crucial to link the measures suggested with their impact on other dimensions of security—within and between generations. A general principle for selecting measures ought to be that they are not carried out at the cost of increased human insecurity.

Although we see the relevance of talking about security risks in relation to climate change, we also believe that it might be relevant to explore other concepts that can be used to strengthen the analysis and policy responses. Many development organizations for instance have adopted the concept of *resilience* (section 3.4), as well as *fragility, vulnerability and insecurity*. We have yet to see examples of how these concepts could work to build bridges between different areas (countries, sectors, disciplines), but this would be interesting to explore. This discussion of concepts is not an esoteric exercise: it is of huge importance to find ways to strengthen mutual understanding, collaboration and knowledge development across different disciplines and policy areas in order to improve the policy responses.

4.1.2. Develop organizational structures to strengthen coordination

Climate and security risks span various policy areas, such as development, foreign policy, disaster risk reduction and security. The cross-sectorial impacts that characterize climate change combined with the lack of conceptual coherence on how to frame these impacts, mean that policy communities are still divided into silos and practitioners think and act in terms of their own mandate and issue-area. Our analysis confirms that a culture of sharing and learning, complemented by support and control measures, will be crucial for moving from theory to practice. Firm political leadership that provides incentives to overcome policy silos will also play an important role in achieving an integrated approach. Thus, *the organizational setting has proved to be an important factor in successful coordination and for integrating climate change and security.*

Policy organizations in different fields play a central role in addressing climate-related security risks, although doing so has often proved challenging for them. Some strategies for addressing these challenges have been identified in this report. For example, one strategy for overcoming the policy silos has been *the creation of interdepartmental working groups*, while another has been *to take assis-*

[230] Adger et al. (note 4).

tance of external expert units or consultancies to coordinate the work (section 3.5). Even though interdepartmental working groups can be time-consuming, they are important for identifying common ground between different units or policy communities. The assistance of external expert units can offer valuable expertise and human resources while also ensuring that an issue is managed in a coherent and sustainable manner.

As a complement to the above-mentioned strategies, our analysis (section 3.5) found that *mainstreaming* could play an important role; either as a way of integrating climate factors into projects aimed at conflict prevention (climate-proofing), or as a way of addressing security risks following climate change (conflict-proofing). One important finding in this regard, however, is that integrating climate factors into existing tools for addressing conflict might overshadow new and previously unaddressed challenges. Thus, mainstreaming strategies should primarily be regarded as a complementary tool for raising the awareness among staff members overloaded with requirements of different policies and priorities.

A second finding from the case studies is that staff members often lack both the incentives and the resources to change their normal procedures of operation (section 3.3.2). Moreover, staff members may use relabelling strategies without substantially changing the orientation of their work. To ensure effective implementation and policy coherence, *incentives and resources for policymakers and administrators need to be strengthened to work across silos* both within and across governmental bodies and public authorities. Achieving this will require *strategic guidance along with sustained and coherent leadership*. Such guidance would articulate a mandate needed for leading and coordinating the work on climate-related security risks.

4.1.3. Enhance systematic and relevant knowledge

Neither the climate nor human societies are static; they are dynamic and alter over time. The impacts that climate has on human societies are also dependent on context-specific vulnerabilities. The importance of knowledge has been emphasized throughout this report, and the collective amount of knowledge on climate-related security risks is increasing rapidly. Despite this, there are and will continue to be uncertainties regarding, for instance, the magnitude of the security risks posed by climate change. One reason for this is that these risks are also dependent on the responses made. In aiming to reduce insecurities, *it is crucial that the uncertainties surrounding climate change and climate-related security risks do not lead to inaction*. Instead, responses are needed that both address the need to reduce security risks and increase knowledge on the pathways linking climate-related change to increased insecurity. These can inform subsequent policy responses. This calls for *iterative processes between context-specific analyses and theory development* as well as *cooperation between policymakers, practitioners and researchers*. We highlight below three reflections that are important for promoting this.

First, *the gap between research and practice needs to be reduced*. Policymakers and practitioners face major challenges in making correct decisions on how to strengthen resilience and reduce insecurity. Research can play an important role

in providing proper knowledge on these processes. To close the gap between research and practice requires increased mutual understanding of the logic of these areas. Encouraging closer collaboration and movement between policy, practice and academic research would be of mutual benefit for both how policymaking is conducted (priorities set and arguments used) and how researchers ask questions and present findings. The case studies (section 3.4) also show how expert units could play a bridging role between policy and research, translating research into policy.

Second, *there is a need to bridge short-term and long-term time frames*. Different time frames are adopted within and across academic disciplines, as well as within and across policy communities. To strengthen measures that aim to strengthen peace and reduce insecurity, it is important to build bridges between different time frames and take into account the implications of measures over time. This has for instance been demonstrated in relation to climate-resilient peacebuilding and conflict-sensitive climate programming (section 3.4.1), but also with respect to disaster risk reduction and climate change adaptation (section 3.2.1) and the development of climate-sensitive conflict early warning systems (section 3.3.2). This calls for methodological developments, where practical work is an important feature in developing methodologies (section 3.3.2). In addition, it calls for reconsideration of how to evaluate any measures taken. Evaluations that focus on short-term goals or outcomes might overshadow the long-term implications. One possibility, for example, might be process-based evaluation, which focuses on how a project is set up and whether the process supports the long-term goals.

Third, *the dynamic character of climate-related security risks means that knowledge acquisition is an ongoing process that spans all kinds of disciplinary boundaries and policy areas*. Nonetheless, most organizations have in-built conservative features regarding how they work, the issues that are most critical and which collaborations are undertaken. A changing world with new and emerging challenges demands strategic guidance on how to counteract these features. Hence, the promotion of new constellations and cross-cutting methodological work—on, for example, conflict prevention, peacebuilding, conflict analysis and risk reduction—could lead to new insights into existing challenges, facilitate mutual understanding of different policy communities' roles and mandates, and the development of appropriate policy measures. The case studies show that strategic guidance is needed in combination with incentives and adequate resources for promoting boundary crossing work.

4.2. Suggestions for the Swedish policy context

The generic conclusions about adequately addressing the security implications of climate change have a number of specific implications for the Swedish context. We conclude by making seven suggestions for concrete measures that could be taken by the Swedish Government. These suggestions emerged from our research findings and were enhanced by issues and ideas raised in informal discussions and workshops with staff from Swedish agencies and organizations.

Set up an interdepartmental working group (IWG) for climate-related security risks. The experience from the case studies clearly highlights the need to coordinate the work of different government departments. IWGs are established forums in the Swedish Government for issues that are relevant to several departments. The establishment of an IWG for climate-related security risks would hence strengthen the Swedish Government's work and could become a hub for the development of Swedish policy on climate-related security risks and suggest long-term and short-term priorities. The IWG could also provide support for Swedish delegations to international organizations such as the EU and the UN. The IWG would probably need a small secretariat.

Set up an external expert unit that supports the government and relevant agencies by providing policy relevant analysis on climate-related security risks. Knowledge development on the impacts of climate change and the practical experience of addressing these challenges is advancing rapidly. The analysis within this report has shown the advantages for policymakers and practitioners in having a support unit that can inform their work by translating recent research into policy relevant analysis. An important function of such a unit would be to act as a bridge between research and policy. It takes several years to build up an expert unit, so long-term core funding will be needed. The expert unit could fulfil several roles: supporting the IWG with policy relevant analysis, arranging annual conferences for Swedish policy actors and practitioners, arranging training courses for staff, and contributing to the establishment of relevant networks internationally.

Establish training courses for staff and policy advisers across departments and agencies. High-level strategies are undoubtedly important for setting priorities, but without practical guidance these strategies are unlikely to be implemented effectively. Regular training courses for staff and policy advisers could play an important role in facilitating the operationalization of strategies into concrete work in sub-areas. In addition, such training could strengthen joint understanding between different policy and issue areas and assist in the reconciliation of different discourses.

Support annual conferences across departments, agencies, research departments and institutes. Supporting appropriate policy responses requires a reduction in the gap between policy and research. Since the topic is relevant for a diverse set of actors that are not always used to meeting together to discuss challenges and practical alternatives, it will be important to arrange annual conferences that can reinforce mutual understanding and facilitate coordinated action. Importantly, such conferences are also central tools to informing and inviting deliberation with citizens and civil society organizations, thereby legitimizing international cooperation domestically.

Involve Swedish embassies and delegations in the work. Embassies, along with EU and UN delegations, represent a valuable geographical presence that fulfils various important functions, such as reporting, disseminating and coalition building.

Since the work on climate-related risks will demand thematic knowledge, some embassies could receive a broader geographical mandate, and help to collect data for the improvement of early warning systems and to advocate the relevance of foreign policy to climate action.

Strengthen international partnerships to contribute proper responses to climate-related security risks. Preventive approaches are critical to dealing with climate-related security risks, and normative issues are inherent in this work. To strengthen the response of the international community, Sweden will need to establish partnerships in international organizations, and between international and regional organizations, but also through collaborating with other countries working towards the same goals. The suggested IWG, the expert unit and strategic work of Swedish embassies and the Swedish delegation in the EU and UN are vital for this.

Take account of previous experience from related policy areas. Despite the fact that climate-related security risks are a fairly new field for Swedish policymaking, many of the challenges posed are not new. Current policymaking could take advantage of the experiences gained in related policy areas, such as the environmental security work by Sida and the Swedish Armed Forces in the 1990s and early 2000s. Even though society is constantly developing and climate change involves many new features, previous experience of integrated approaches can be fruitful in the development of effective responses to today's trans-boundary challenges, including climate-related security risks.

Appendix A. Sources

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Interviews

Group interview with representatives from the Stabilisation Unit (UK), 6 Jan. 2016.

Group interview with EEAS representatives, 28 Jan. 2016.

Group interview with EEAS representatives, 4 Mar. 2016.

Interview with an employee at DFID, 23 Dec. 2015.

Interview with an employee at DFID, 5 Jan. 2016.

Interview with an employee at DFID, 6 Jan. 2016.

Interview with EEAS representative, 28 Jan. 2016.

Interview with an employee at GIZ, 9 Feb. 2016.

Interview with EEAS representative, 10 Feb. 2016.

Interview with EEAS representative, 4 Mar. 2016.

Interview with a former EU ambassador, 5 Mar. 2016.

Interview with EEAS representative, 22 Mar. 2016.

Interview with an employee at GIZ, 23 Mar. 2016.

Appendix B. About the authors

Sebastian van Baalen (Sweden/Netherlands) is a PhD-candidate at the Department of Peace and Conflict Research at Uppsala University. He has a BA degree in Political Science and a MSc in Peace and Conflict Research from Uppsala University. In 2015 he was awarded the Mats Hammarström Prize for 'outstanding student essay' in peace and conflict research for his thesis *'So, the killings continued' —Wartime Mobilisation and Post-war Violence in KwaZulu-Natal, South Africa*. In 2014 he conducted field research in South Africa on post-war violence, and he has previously worked as a journalist, reporting from among others Azerbaijan, East Timor, Mozambique and South Africa. His research interests are the environmental drivers of armed conflict in Africa, rebel governance, and the social and political legacies of armed conflict.

Niklas Bremberg (Sweden) is Research Fellow at the Swedish Institute of International Affairs. He holds a PhD in Political Science from the University of Stockholm and has been visiting researcher at the University of Toronto, the University of Liverpool and Universitat Autònoma de Barcelona. His research focuses on regional security governance, security communities and EU foreign and security policy, especially towards North Africa. His publications include the research monograph, *Diplomacy and Security Community-Building: EU Crisis Management in the Western Mediterranean* (Routledge), and various articles on EU foreign and security policy, crisis management and Spanish-Moroccan relations, in journals such as *Journal of Common Market Studies, Cooperation & Conflict, European Security* and *Mediterranean Politics*.

Lisa Dellmuth (Germany) is a senior lecturer in international relations in the Department of Economic History at Stockholm University. She obtained her PhD from the University of Mannheim, Germany, in 2011. Her research interests include: global environmental politics, legitimacy in global governance, public opinion towards international organizations, and equitable growth in the European Union. She has received several research prizes, including the Sage Award for the Best Article Published in EU Politics in 2012 and the Early Career Grant by the Regional Studies Association in 2014. Her research is published in journals such as the *British Journal of Political Science*, *European Union Politics*, *Journal of Common Market Studies*, *Journal of European Public Policy*, *Review of International Organizations*, and *Review of International Studies*.

Maria-Therese Gustafsson (Sweden) is post-doctoral Research Fellow in the Department of Political Science, Stockholm University. Prominent themes in her research are natural resource governance and political participation. She holds a PhD from Stockholm University and her dissertation was awarded with 'Högskoleföreningens' prize for the best dissertation at the Faculty of Social Science, Stockholm University, in 2015. She has published articles in the *Latin*

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Malin Mobjörk (Sweden) is a Senior Researcher in the SIPRI Security and Development Programme. The nexus of climate change, security and development has been a major focus of her work during the last decade. She has conducted numerous studies for Swedish governmental bodies on climate-related migration, natural-resource-based violent conflicts and risk analysis. She has also been involved in foresight and scenario analyses, including the Swedish Future Commission in 2013. Another area of expertise relates to inter- and transdisciplinary research, with a particular interest in organizational issues and policy. She received her PhD in 2004 from the Department of Environmental Studies, Linköping University, Sweden. She is also a member in the Expert Group for Aid Studies, EBA.

Hannes Sonnsjö (Sweden) is a research assistant in the department of Political Science at Stockholm University. He has a BA degree in Political Science from Orebro University and a MSc in Environmental Management and Economics from Gothenburg University. His recent studies have focused on energy security through theories of international relations, the capacity of the EU and NATO to deal with emerging threats, such as climate change and energy, as well as more organizational EU-studies, such as the role of the European External Action Service in crisis management.

Climate-related Security Risks: Towards an Integrated Approach

The security implications of climate change have attracted increasing attention in policymaking and research circles since the early 2000s. Since climate change has far-reaching implications for human livelihoods and activities, the potential security implications are broad and complex. Responses from different policy communities—foreign affairs, defence, environmental and development—are therefore required. These communities are currently at different stages of developing strategies to integrate climate-related security risks into their work.

This report provides an overview of climate-related security risks and policy responses for addressing those risks. First, it presents findings on six thematic areas in which climate change can pose security risks. Second, it investigates how policy organizations integrate climate-related security risks into their policies and practical work. The analysis provides a deeper understanding of the opportunities and challenges presented by different integration strategies. In doing so, it offers relevant insights and practical alternatives to help address and work with the security risks posed by climate change. This knowledge is prerequisite to policymakers seeking to accurately assess the value of current strategies and identify how policies, strategic guidance, internal organization and procedures could be improved in order to respond better to climate-related security risks.