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*Environmental Peacemaking and Environmental Peacebuilding
in International Politics*

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Environmental Peacemaking and Environmental Peacebuilding in International Politics

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Preliminary remarks

This working paper is a modified version of the introductory chapter of my habilitation thesis.[1] It summarises and connects the insights of ten papers I have written (some of them with co-authors) since February 2015. Furthermore, the working paper discusses these insights on environmental peacemaking and environmental peacebuilding in the light of broader debates in peace and conflict studies, international relations and political science. As of yet, nine of the ten papers that constitute my cumulative habilitation thesis are published.

1 Situating Environmental Peacemaking and Environmental Peacebuilding

At latest after the end of the Cold War, the interlinkages between environmental change, renewable resource scarcity, violent conflict and insecurity have been intensively discussed in political science research (Brauch 2009). Initial concerns about interstate wars over water (Starr 1991) have been quickly refuted (Wolf et al. 2003). In the mid-1990s, two large research projects conducted by the so-called Zurich group (Bächler 1998; Bächler et al. 1996) and Toronto group (Homer-Dixon 1994; Homer-Dixon and Blitt 1998) found that water and land scarcity increases the risks of intrastate violence. However, these results were disputed on methodological (Gleditsch 1998), theoretical (Levy 1995) and empirical grounds (Peluso and Watts 2001).

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[1] For those not overly familiar with the German academic system: A habilitation is a post-PhD qualification that enables a researcher to apply for full professorships (although a habilitation is not always necessary to gain such a position). The habilitation consists of (at least in my case) a habilitation thesis, four courses taught independently, a teaching demonstration, a scientific colloquium and an inaugural lecture.

With increasing concerns about the security implications of climate change, the debate has been revived from 2007 onwards (McDonald 2013; Scheffran et al. 2012). A large number of studies have argued that higher temperatures, fewer and less predictable rainfalls, more frequent/intense natural disasters and rising sea levels increase the risk of unrest, terrorism and armed conflict within states. Other authors, using similar research strategies and data, find neither a correlation nor a link between (predicted) climate change impacts and various forms of conflict (for recent reviews, see: Koubi 2019; van Baalen and Mobjörk 2018). The research field remains essentially divided (Buhaug et al. 2014; Hsiang et al. 2013), although there is an increasing consensus that climate-induced environmental changes slightly increase conflict risks, but only in certain contexts (Detges 2016; Schleussner et al. 2016; von Uexkull et al. 2016).

But despite the rather equivocal empirical evidence, policy makers are increasingly concerned about the interlinkages between climate change, environmental stress, security and conflict. The G7 Foreign Minister stressed in 2015 for example: "Without adequate mitigation and adaptation efforts, the impacts of rising temperatures and changing precipitation patterns heighten the risk of instability and conflict" (Wilson Center 2015). In the same year, then US President Barack Obama claimed that "severe drought helped to create the instability in Nigeria that was exploited by the terrorist group Boko Haram [and] helped fuel the early unrest in Syria" (The White House 2015). Also referring to the Syrian civil war, among others cases, former US Secretary of Defense James N. Mattis stated in 2017 that "climate change is impacting stability in areas of the world where our troops are operating" (Independent 2017). And current UN Secretary General Antonio Guterres highlights: "Most of today's conflicts are fuelled by competition for power and resources, inequality, marginalisation and exclusion, poor governance, weak institutions, sectarian divides. They are exacerbated by climate change" (Farand 2017).

My study *Climate War in the Middle East?* (Ide 2018a) illustrates the environmental (and climate) conflict debate by reviewing evidence about its currently most prominent and intensively debated case: the potential link between the 2006-2009 drought in Syria, the massive loss of livelihoods in the drought-affected regions, out-migration to urban areas, and the onset of Syrian civil war in early 2011. It finds that such a chain of links is certainly plausible, but yet unproven as major knowledge gaps exist, especially regarding the attribution of the drought to climate change and the way deprivation and migration contributed to the civil war onset.

From the late 1990s onwards, however, an alternative debate started to emerge that was less concerned about whether or not environmental change increases violent conflict risks. Rather, this environmental peacemaking approach proposed that environmental problems are common challenges or, more specifically, low-politics, cross-border, positive-sum issues. They are thus well-suited to serve as entry points for joint problem solving, cooperation, conflict resolution, trust building, and eventually peacemaking. These approaches draw strongly on functionalist and liberal theories of international relations (Haas 1964; Keohane and Nye 2001), on early ecological approaches in peace and conflict studies (Brock 1991), and more recently on constructivism and sociological institutionalism (Adler 1997; Finnemore 1996).

An edited volume by Conca and Dabelko (2002b) synthesised the environmental peacemaking approach early on. It proposed that environmental cooperation can contribute to international peace via two pathways. At the level of decision makers, cooperation on

environmental issues can lead to trust building and the acknowledgement that positive-sum interactions are possible, hence facilitating a change of the strategic climate. But environmental cooperation can also lead to increasing translational networks of scientific, civil society and political actors, thus strengthening post-Westphalian governance (the mechanisms of environmental peacemaking are discussed in further details in sections 2 and 5).

Beyond debates on environmental security, research on environmental peacemaking can contribute to several key research areas in political science and international relations. Since the mid-1990s, for instance, scholars of international politics are increasingly concerned about rivalries, that is, intense, rather long-lasting and often militarised conflicts between two states (Klein et al. 2006). As rivalries account for more than 90% of all interstate wars since 1945, studying them enables researchers to trace the long-term, structural conflict dynamics behind individual violent disputes (Thompson 2001), while the empirical record is broad enough to draw evidence from more than just a few prominent cases (namely, the conflict between the USA and the Soviet Union).

Research has so far identified a number of factors facilitating rivalry termination (and hence more peaceful international relations), such as additional threats emerging for the involved states (Akcinaroglu et al. 2014), systemic shocks (Rasler et al. 2013) and economic recession in at least one of the respective countries (Clary 2015). But with a few exceptions, the theoretical frameworks underlying such studies usually emphasise threats to national security, state capabilities and regime survival, hence broadly fitting a realist theoretical framework (Prins and Daxecker 2008; Rasler et al. 2013). The environmental peacemaking approach provides an important correction here as it proposes, in line with liberal theories of international politics (Keohane and Nye 2001), that interdependence and low-level cooperation can have a transformative impact on conflicts between states. Especially environment-related factors have played no role in the literature on rivalries as of yet.

Furthermore, research on global environmental politics has so far largely conceived environmental cooperation as a dependent variable whose occurrence and effectiveness has to be explained (Mitchell and Zawahri 2015; Young 2016). If environmental cooperation is conceived as an independent variable, its impact on actual environmental outcomes such as greenhouse gas emissions (Peters et al. 2017) or marine pollution (Barkin 2011) are usually investigated. Research on environmental peacemaking, by contrast, explicitly considers the possibility that environmental cooperation can be an independent variable in political contexts by facilitating follow-up cooperation (Scheumann and Shamaly 2016), conflict prevention (Barquet et al. 2014) and even more peaceful international relations (empirical evidence for this claim is present in section 3).

With the end of the Cold War, the prevalence of intrastate armed conflict and the failure of several externally supported efforts to stabilise post-civil war societies, post-conflict peacebuilding emerged as a key area of study in political science (Autesserre 2017; Richmond 2011). Research in this field has gained important insights on, for instance, local peacebuilding systems (Allouche and Jackson 2018), encounters between global and local peacebuilding dynamics (Björkdahl and Höglund 2013), democracy and peacebuilding (Fiedler 2018), security sector reform and peacebuilding (Schnabel and Ehrhart 2002), and education for sustainable peace (Bentrovato 2017). The environmental peacemaking approach can further add to this literature. Peacebuilding research often ignores environmental factors (Matthew

et al. 2009), but shared environmental problems can provide incentives for cooperation between former conflict parties (Cain 2014). The provision of water services and land is also crucial to integrate former combatants into the regular economy and to boost state legitimacy (Bruch et al. 2016; Krampe and Gignoux 2018).

Peace and conflict studies is also increasingly interested in the onset, dynamics and termination of small-scale conflicts, such as non-violent protests, riots and communal violence (Day et al. 2015; Salehyan et al. 2012). Research from other disciplines such as anthropology (Adano et al. 2012), economics (Bogale and Korf 2007) and geography (Bukari et al. 2018) has shown that environmental cooperation can support the prevention and transformation of conflicts within and between local communities. The environmental peacemaking approach is well-suited to take up these (and generate additional) findings and feed them into broader political science debates about small-scale conflicts. This is the case because the environmental peacemaking approach itself is deeply grounded in the theoretical and conceptual frameworks of international relations (Conca 2002). Bringing such insights on environmental peacemaking at the communal level to small-scale conflict research is especially important as the latter already discusses climate change and resource scarcity as drivers of conflict (Raleigh and Kniveton 2012; Seter et al. 2018).

But while the environmental- and climate-conflict field developed rapidly in the mid-2000s, the environmental peacemaking approach received relatively little attention despite its potential to contribute to several important academic debates (but see Ali 2007; King and Wilcox 2008; Lejano 2006). Even studies explicitly finding that social groups and states cooperate (rather than compete) in the face of environmental problems mostly use their results to address the environmental conflict literature, and often do not refer to environmental peacemaking at all (e.g., Berger 2003; Canter and Ndegwa 2002; Linke et al. 2015; Witsenburg and Adano 2009).

Only more recently, the topic gained broader attention, most likely because of (i) the increased interest of political scientists in peacebuilding processes (Leonardsson and Rudd 2015) and (ii) the attention and support provided by the United Nations Environmental Program (UNEP 2009) for analysing the environmental dimensions of peacebuilding (Bruch et al. 2016; Troell and Weinthal 2014; Unruh and Williams 2013). However, in contrast to earlier studies using the label environmental peacemaking, such research on what is now often called environmental peacebuilding often has a narrow focus on resource management and service provision in post-civil war contexts.

2 Environmental Peacemaking and Peacebuilding in Context

At the beginning, it is important to locate environmental peacemaking and environmental peacebuilding in the context of broader academic and political debates. In the first part of my habilitation thesis, I assess the existence and prominence of environmental peacemaking in two distinct, yet broad and important discursive arenas more thoroughly. Based on the finding that environmental peacemaking has so far received limited attention by both scholars and broader publics, both articles also discuss the potential negative impacts of such a lack of attention.

My co-authored study *Sampling Bias in Climate-Conflict Research* (Adams et al. 2018) conducts a meta-analysis of the journal articles published in climate-conflict research between 1989 and 2016. It finds that while considerations of climate vulnerability play a minor role, the literature strongly samples on the dependent variable, that is, it focuses on countries with a high prevalence of armed violence. Such a sampling bias might not only distort results on the links between climate change and conflict, but also indicates that little attention is paid to processes of peaceful adaptation to climatic stress. Consequentially, research as a whole stigmatises certain regions (especially Africa) as naturally chaotic and violent. Further, such a sampling bias constraints the capability of climate-conflict research to analyse how environmental and conflict issues can be addressed simultaneously (Gilmore et al. 2018), which is a major strength of the environmental peacemaking approach (Barnett 2018).

The paper *Critical Geopolitics and School Textbooks* (Ide 2016a) analyses how current[2] German school textbooks portray environment-conflict links. In this context, school textbooks are conceived as indicators of broader geopolitical discourses and as widely used educational media. Mirroring the results of the analysis of academic papers conducted by Adams et al. (2018), I find that environmental conflicts are frequently discussed, while environmental cooperation and especially environmental peacemaking are almost not mentioned. This provides a one-side and deterministic view on environmental security issues, facilitates the stigmatisation of (certain regions in) the Global South as chaotic and violent, and further paves way for the much-criticised securitisation of environmental issues (Brzoska 2009; Ide et al. 2017; Methmann and Oels 2015).

In line with the expectations outlined above, one can hence conclude that environmental peacemaking plays a minor role in both academic research and public discourses. As already implied, this is unfortunate for a number of reasons: First, environmental peacemaking provides an important counter-narrative to deterministic, securitising and at times stigmatising environmental conflict discourses (Ali 2011; Barnett 2018). Second, environmental peacemaking might provide a unique opportunity to address two key challenges of the 21st century — global environmental change and violent conflicts — simultaneously (Pettersson and Eck 2018; Steffen et al. 2015). It can also help to combat (especially transnational) environmental crime by analysing how illegal resource exploitation is conducted and regulated in conflict-prone seetings (Stoett 2018). Third, environmental peacemaking draws from and advances research on international relations (Conca 2001), political geography (Barnett 2018), comparative politics (Cabada and Waisova 2018), economics of the commons (Ratner et al. 2013), and ecology (Roulin et al. 2017). It hence provides a unique opportunity for interdisciplinary dialogue and integrative knowledge cumulation (Zinnes 1976).

Consequentially, the main goal of my habilitation thesis was to advance the state of knowledge on environmental peacemaking and environmental peacebuilding in international politics. After contextualising the topic in a wider research context as well as discussing its societal and academic reception and relevance, this working paper will discuss new evidence on the interlinkages between environmental cooperation, peacemaking and peacebuilding that were gained during the habilitation.

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[2] As of May 2015.

Before doing so, however, a definition of core concepts and an assessment of the existing literature are due. I have done this in a comprehensive manner in my article on *The Impact of Environmental Cooperation on Peacemaking* (Ide 2019), which provides the first comprehensive review of the environmental peacemaking literature. Therefore, I only provide a summary here: I adopt environmental peacemaking as an overarching term that refers to all forms of cooperation on environmental issues between distinct social groups (including states) which aim at and/or achieve creating less violent and more peaceful relations between these groups. In this context, peace is conceived as a "continuum ranging from the absence of violent conflict to the unimaginability of violent conflict" (Conca and Dabelko 2002a: 220).[3]

I use the term environmental peacebuilding, which is currently more widespread in the literature, only when discussing efforts to integrate natural resource management into conflict prevention, resolution and recovering processes in post-civil war contexts.[4] In this sense, environmental peacebuilding is a sub-concept of specific form of environmental peacemaking. When talking about environmental issues, I will focus only on renewable resources like soil, water or wood. Non-renewable resources, such as oil, gas or diamonds, can have major impacts on the dynamics of peace and conflict (Collier and Hoeffler 2005; Jakobi 2013; Ross 2015), but go beyond the scope of this working paper (and of my habilitation thesis). I include the literature on disaster diplomacy, however, as it is conceptually and methodologically very close to environmental peacemaking, while disasters originating from natural hazards can have very negative impacts in the form of land degradation and water insecurity (Kelman 2012).

When assessing the existing literature, Ide (2019) finds that environmental cooperation can facilitate peacemaking by cultivating interdependence (pathway 3), by improving the environmental situation (pathway 1), by building understanding and trust (pathway 2), and by establishing new institutions (pathway 4). However, only the latter three mechanisms have been empirically observed so far. Further, while environmental cooperation can support the establishment of more peaceful relations, such an effect is often limited to more negative forms of peace. The success of environmental peacemaking is also highly dependent on a number of context factors, such as the absence of strong tensions or external mediation and support.

This literature review identifies major knowledge gaps as well, especially regarding (i) the relevance of environmental peacemaking vis-à-vis other drivers of peace, (ii) the pathways connecting environmental cooperation to peacemaking, and (iii) the time horizons and depth of environmental peacemaking. In line with other recent contributions (Dresse et al. 2019; Krampe 2017), I conclude that, among others, more cross-case comparative studies are needed to address these knowledge gaps.

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[3] This continuum is largely identical with the distinction between negative peace, defined as the absence of physical violence, and positive peace, defined as the absence of structural violence, as outlined by Galtung (1969).

[4] Please note that post-civil war societies are not necessarily peaceful, but often characterised by high levels of physical and structural violence (Richmond and Mac Ginty 2015).

3 International Environmental Peacemaking

The second part of my habilitation thesis addressed these knowledge gaps. It employed a multi-method research design and various cross-case comparisons to address the following questions: Does environmental cooperation contribute to peacemaking between states, and if so, in which time horizons, through which processes and in which contexts?

My study *Does Environmental Peacemaking between States Work?* (Ide 2018b) combines a statistical analysis of 3,164 cases (in the form of dyad-years), a qualitative comparative analysis (QCA) of 20 cases and six desk-based case studies to answer these questions. The study uses water- and conservation-related, mini-lateral[5] environmental agreements that provide concrete provisions for exchange and cooperation – so-called cooperative environmental agreements (CEAS) – as the independent variable. Using data for the 1946-2010 period, it finds that the conclusion of a CEA makes reconciliation between two rival states significant more likely in the following five years, hence providing support for the environmental peacemaking approach.

However, three qualifications are due: Firstly, environmental cooperation can catalyse or "lock-in" existing processes of reconciliation, but has no effect if such processes have not yet started. Secondly, environmental cooperation is usually not the most important factor for interstate reconciliation. Thirdly, the success of environmental peacemaking is strongly dependent on the presence of a number of context factors. High attention to environmental issues, internal political stability in both states, and existing networks and traditions of environmental cooperation are particularly important here.

Despite its robust findings backed up by a triangulation of insights from different methods, the approach employed by Ide (2018b) has two shortcomings. On the one hand, it largely focuses on negative peace in form of reconciliation between rival states, while the literature (and my habilitation thesis) understands peace explicitly as a continuum ranging from negative to more positive forms of peace (see Ide 2019). On the other hand, even environmental agreements with provisions for exchange and cooperation are not perfect indicators for environmental cooperation. After all, these provisions might exist on paper only, while agreement data do not cover informal environmental cooperation (for instance in the form of joint meetings or policy coordination) (Wolf 1998; Zeitoun and Mirumachi 2008).

Both shortcomings are addressed by the study *International Water Cooperation and Environmental Peacemaking* (Ide and Detges 2018). Just like Ide (2018b), it asks whether environmental cooperation increases the likelihood for more peaceful interstate relations. In order to study negative as well as positive forms of peace, it uses the peace scale data by Goertz et al. (2016). The dataset states for every pair of states interacting with each other whether this relationship can be characterised as a severe rivalry, a lesser rivalry, negative peace, warm peace or a security community. Further, instead of relying on treaty data, I use positive water-related interactions between two states – including verbal support, scientific exchanges or economic support – as an indicator for environmental cooperation. The study is limited to states sharing a river basin (and other state-pairs only very infrequently interact over water) and the period 1956 to 2006.

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[5] Usually not more than four signatories.

Despite the modified research design, this study confirms the results of Ide (2018b) presented before. A higher number of positive water-related interactions in the previous ten years increases the likelihood of a dyad to move towards the positive end of the peace scale in any given year. The respective correlation is considerably stronger for dyads without acute conflicts, while for the sample of intense conflict dyads, the correlation is still positive, but no longer significant. Similarly, other variables seem to be more important for a dyad moving upwards on the peace scale, such as the presence of transition periods in the international system (for instance after the end of the Cold War) or the establishment of democracies in both states.

The results of Ide and Detges (2018) hence increase confidence in the assumption that environmental cooperation has a moderate, yet positive and significant effect on interstate peacemaking, and that this effect is dependent on the presence scope conditions such as pre-existing reconciliation dynamics. They also confirm that environmental peacemaking is most likely to be successful in the medium term (five to ten years).[6] However, in contrast to parts of the existing literature (see Ide 2019), I find that environmental cooperation can also have an effect on more positive forms of peace.

The book chapter *Environmental Peacebuilding in the Middle East* (Ide et al. 2018b) illustrates and confirms these results by providing two case studies on the intertwined dynamics of interstate conflict, water cooperation and peacemaking between Israel and Jordan as well as between Turkey and Syria. As predicted by the cross-case analyses, an improvement of the macro-political climate between the states opened a window of opportunity for environmental cooperation to intensify and become more visible. In the case of Israel and Jordan, water cooperation was used as a trust building mechanism in the 1980s. During the peace process in the 1990s, the parties built on this history of coordination and frequently used water issues to make progress when negotiations on other issues were stuck (see also Abukhater 2013).

Similarly, when the political elites of Syria and Turkey decided to forge better relations with each other in the early 2000s, they utilised water issues such as the Friendship Dam at the Orontes River to demonstrate commitment to the reconciliation process. The academic and civil society networks that had formed around these issues in the past (via a tradition of low-level environmental cooperation) were highly useful in this context (see also Scheumann and Shamaly 2016). This process broke down, however, with the onset of the Syrian civil war in 2011, hence confirming the finding that internal political stability is crucial for environmental peacemaking (Ide 2018b).

Combining the findings from these three studies – which use different methods, data and cases – reveals a rather coherent picture on environmental peacemaking in international politics: Environmental cooperation enhances the chances of peacemaking, although it is not the most important factor in this regard. This effect is most likely in the five to ten years after official cooperation was initiated. But any success of environmental peacemaking is contingent on a number of context factors, especially on the absence of an acute conflict, support by political elites, relative internal political stability, environmental awareness, and pre-existing environmental cooperation. The eight case studies presented confirm the results

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[6] Although it should be mentioned that results of this study are not as robust and significant for the five year time lag as for the ten year time lag.

of the literature review, namely that building institutions (pathway 4) and increasing understanding and trust (pathway 2) are the most important causal links between environmental cooperation and more peaceful relations. As expected, improving the environmental situation hardly plays a role at the international level.

However, contrary to most of the literature (Ide 2019), my research also found that cultivating interdependence (mechanism 3), especially in the form of a spill-over of cooperation, plays a role as well. This is most obvious notably in the Syrian-Turkish case, where cooperation on flood prevention encouraged shared hydro-electricity projects, and in the Israeli-Jordanian case, where cooperative relations on water build during the 1980s spilt into the 1990s peace negotiations and current plans to establish a Red-Dead Canal. The next section provides further evidence for the relevance of mechanism 3 at the meso-level between Israel and Palestine.

4 Meso-Level Perspectives on Environmental Peacemaking and Peacebuilding

The third part of my habilitation thesis took a meso-perspective on environmental peacemaking and peacebuilding. It focuses on local and location-specific processes to contribute to the broader debate on environment-peace links (Grech-Madin et al. 2018). This allowed me to shed light on issues such as education or bottom-up civil society activities that can hardly be captured by analyses of interstate and especially intergovernmental processes. Studying the interlinkages between environmental cooperation and peace at the meso-level is also crucial as the analyses presented above emphasised the importance of a tradition of environmental cooperation (at the micro- and meso-level) for successful environmental peacemaking.

Both locations under analysis (Israel/Palestine and Timor-Leste), while still being characterised by strong tensions, experienced major outbursts of civil violence prior to the period of study,[7] and are hence considered peacebuilding cases in the literature (Paffenholz 2014). Consequentially, I use the term environmental peacebuilding when discussing these cases.

The next two articles discussed both study environmental peacebuilding processes in the context of an intractable conflict (Moore and Guy 2012), the Israeli-Palestinian conflict. As has been detailed above (see section 2), pre-existing environmental cooperation can facilitate environmental peacemaking once a window of opportunity (in the form of a less hostile political atmosphere) opens. Here, I summarise the findings of these studies on exactly such attempts of environmental cooperation and peacebuilding in a setting still characterised by high levels of political conflict. In other words, I analyse least-likely cases (Flyvbjerg 2006; Gerring 2007) that are crucial to understand how environmental peacebuilding processes work in settings not (yet) ready for successful environment-peace links, but which can be important in setting the stage for the latter.

The article *Space, Discourse and Environmental Peacebuilding* (Ide 2017) draws on wider efforts to introduce spatial theory as developed by human geographers into political science research (Boelens et al. 2016; Chojnacki and Engels 2013). Environmental peacebuilding

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[7] In the case of Israel and Palestine, this was the Second Intifada (2000-2005) and the First Gaza War (2008-2009), while in Timor-Leste, it was the so-called 2006 Crisis which saw fighting between different groups.

approaches often assume space to be exogenously given, for instance when claiming that environmental issues cross borders or that ecological interdependencies provide incentives for cooperation (Carius 2006). Spatial theory, by contrast, insists that space, for instance in the form of borders and cross-border interdependencies, is a social construct that is established and challenged in the discursive realm.

Drawing on the case of an environmental peacebuilding initiative in Israel and Palestine, the Good Water Neighbors (GWN) project launched by the NGO EcoPeace[8], I show that environmental and political spaces are indeed not objectively or exogenously given. Rather, ecological and political boundaries, the adequate scales (local, national, transnational etc.) for managing environmental issues, and the social and environmental characteristics of certain places are actively contested between the dominant discourses in the Israeli and Palestinian societies and an alternative GWN discourse, with the latter putting more emphasis on inclusiveness and interdependence.

Such counter-discourses are important for explaining water and environmental cooperation in the GWN project. But the members of the project also promote them actively in order to set the stage for cooperation, reconciliation and eventually (environmental) peacebuilding. Referring back to the theoretical framework previously developed (see section 2 and Ide 2019), the GWN project aims to build peace by cultivating interdependence (pathway 3) between both parties. It discursively constructs spaces of environmental interdependence and seeks to populate them with concrete examples of cooperation, while also creating understanding and trust (pathway 2) during the process.

The study *Education and Environmental Peacebuilding* (Ide and Tubi 2019) sheds light on a so far underexplored topic in the field of study. Despite a growing body of research highlighting the importance of education for peacebuilding (e.g., Davies 2010; Novelli et al. 2017) and the potential relevance of education for political socialisation (Voigtländer and Voth 2016), research on environmental peacebuilding has so far paid very limited attention to education. Following up on insights discussed in the previous sections, especially alternative education can be an effective way to build contacts and understanding during periods of political tensions, and to spread discourses of interdependence and reconciliation (Durand and Kaempf 2014; Pingel 2008).

Ide and Tubi (2019) analyse the education activities of three environmental peacebuilding projects run by NGOs in the Israeli-Palestinian context: GWN, the Migrating Birds Know No Boundaries project[9], and the Arava Institute for Environmental Studies[10]. The three projects use education to improve the environmental situation (pathway 1), to cultivate interdependence (pathway 3), and to create understanding and trust (pathway 2), with the latter pathway being most relevant. All projects face several problems, including political tensions, local resistance, mobility restrictions and funding limitations. Still, they are able to build pro-peace networks, spread discourses of environmental interdependence and cooperation, and build trust, hence setting the stage for further (formal/high-level)

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[8] See also http://ecopeaceme.org/.
[9] See also http://arava.org.
[10] See also https://www.birds.org.il/he/index.aspx.

environmental peacebuilding once political leaders on both side opt for more reconciliatory policies.

Furthermore, the analysis demonstrates that much criticised processes of depoliticization (Aggestam and Sundell 2016; Alatout 2006) and neoliberalisation (Amster 2014; Novelli and Higgins 2017) can have positive effects on environmental peacebuilding. This is because they open up largely uncontested spaces for dialogue and provide material incentives to participate in the respective projects, both of which is otherwise hard to achieve in settings characterised by intractable conflicts.

The final, forthcoming part of my habilitation thesis (Ide et al. n.d.) simultaneously provides a challenge to many existing environmental peacemaking and peacebuilding approaches – including the ones presented in the preceding chapters – and an outlook towards promising paths for future research. The paper studies the *tara bandu* ritual and institution in post-civil war Timor-Leste, which is used to manage social relations and natural resources at the same time, and can hence be considered as an environmental peacebuilding practice.

This analysis questions the assumptions and boundaries of environmental peacebuilding and peacemaking scholarship in three regards.

Firstly, until very recently, most research on environmental peacebuilding has studied cooperation and conflict between states (e.g., Barquet 2015; Bruch et al. 2012; Carius 2006; Conca and Dabelko 2002b; Huda and Ali 2018). Large parts of my research discussed in this working paper are no exception to this. However, environmental security research has long established that environmental conflicts are much more likely to take place within rather than between states (Koubi et al. 2014; Theisen et al. 2013). Almost all armed conflicts nowadays also occur within states (Pettersson et al. 2019). Consequentially, it would be worthwhile to explore intrastate environmental peacebuilding in further detail, especially to contribute to recent debates about communal conflicts in political science (Pierskalla and Hollenbach 2013). The analysis of *tara bandu* indeed finds that managing social and environmental issues simultaneously has contributed to more coherent local relations in Timor-Leste.

Secondly, focussing on the intrastate level brings environmental peacebuilding research closer to the bourgeoning debates about liberal, local and hybrid peacebuilding (Autesserre 2017; Geis and Wagner 2017; Richmond 2011). This encounter can be challenging. My study on Timor-Leste demonstrates, for example, that environmental peacebuilding research has largely focused on cases characterised by heavy outside (usually international) involvement. The research field is therefore not only providing implicit support for much criticised liberal peacebuilding approaches, but also leaves bottom-up environmental peacebuilding processes underexplored. Ide et al. (n.d.) (in line with Ide 2019 and especially Ide and Tubi 2019) demonstrate the relevance of such bottom-up processes. Engaging with debates about hybridity and friction in peacebuilding, they also show how international involvement provides an opportunity as well as a problem for *tara bandu*.

Thirdly, and related to the previous point, environmental peacebuilding research is based on a positivist-rationalist ontology, which is concerned with environmental interdependencies, shared interests and mutual benefits. This ontology has already been challenged by critical environmental security research (Alatout 2006; Duffy 2006) and constructivist spatial theory (Ide 2017). However, postcolonial political scientists emphasise that even constructivist

concepts like discourse, narrative and perception can have shortcomings when employed in settings radically different from the (Western) ones in which they have developed (Acharya and Buzan 2009; Vasilaki 2012). Drawing on these debates, the case of *tara bandu* illustrates how bottom-up environmental peacebuilding processes are deeply embedded into local spiritual and communal relations including, among others, connections to the ancestral realm and supernatural punishments. These relations are crucial for the success of *tara bandu*, yet not easy to grasp by Western environmental peacebuilding researchers as well as by international peacebuilding actors (especially when using a positivist-rationalist ontology).

5 Conclusion

Environmental peacemaking is a rather young research field. While first ideas about environment-peace links popped up in the 1990s (Brock 1991), systematic research only emerged around the year 2000 (Conca and Dabelko 2002b), and it took another ten years before a broader community of scholars started to engage with the topic from a multitude of disciplinary, regional, theoretical and methodological perspectives. Environmental peacemaking is highly relevant as it (i) provides counter-narratives to securitising and at times stigmatising environmental conflict discourses, (ii) can help to address conflict- and environment-related problems simultaneously, and (iii) is increasingly incorporated into NGO activities, UN peacebuilding missions and UNEP programs (UNDPA and UNEP 2015).

Yet, as with any other emerging research field, considerable knowledge gaps on environmental peacemaking continue to exist. The studies I discussed in this working paper make a manifold contribution to the research field by employing a variety of methods, including statistical analysis, quantitative and qualitative content analysis, QCA, systematic literature review, discourse analysis, desk-based case studies, and field research based on semi-structured interviews and participatory observation. The eight key findings of these studies (which together constitute my habilitation thesis) are:

1) Environmental peacemaking receives limited attention in academic and societal discourses, especially compared to environment-conflict links, with adverse consequences for research and policy.

2) Environmental cooperation can catalyse or "lock-in" existing reconciliation processes between states, especially in medium-term time horizons of five to ten years.

3) The success of international environmental peacemaking is strongly dependent on several context factors, most notably the absence of acute conflicts, high levels of environmental attention, internal political stability, and a tradition of environmental cooperation.

4) Such a tradition of environmental cooperation as well as awareness of environmental interdependencies are facilitated by educational activities and educational media, if only to a limited extend (among others because they operate in very challenging conflict contexts). Processes of neoliberalisation and depoliticisation can be supportive in this regard.

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5) Although the evidence for this is more limited, environmental cooperation can also contribute to more peaceful relations within states. However, to do so, such cooperation has to be embedded into local socio-economic, political, ecological and spiritual relations.

6) Of the four pathways potentially connecting environmental cooperation to peacemaking, increasing understanding and trust (pathway 2) is most relevant, while building institutions (pathway 4) also plays a role. Improving the environmental situation (pathway 1) only matters in intrastate settings where resource conflicts are prevalent. Cultivating interdependence (pathway 3) can help to create a tradition of cooperation but seems to play a limited role in environmental peacemaking processes at the formal level.

7) Rationalist-positivist ontologies and theories currently dominant in environmental peacemaking research have serious shortcomings. They are unable to capture, among others, the social construction of space as well as local, non-Western worldviews, both of which have been shown to be important for environmental peacebuilding.

8) Related to this, the liberal peacebuilding project, but at times also more hybrid approaches have problems to account for such local complexity, and therefore might suffer from considerable problems when implementing environmental peacemaking and peacebuilding. That said, external mediation and support can also be an important facilitator of environmental peacemaking.

These insights on environmental peacemaking contribute to a number of specific debates as outlined in this introduction and the individual studies, for instance on the spatial dimensions of political processes (Chojnacki and Engels 2013), postcolonialism in political science (Ziai 2012) and peace education (Ide et al. 2018a). But taken together, my findings also enrich five key political science research fields.

Firstly, environmental change and renewable resource scarcity are not only drivers of violent conflict as suggested by many studies on environmental security (Ide 2015; Mach et al. 2019; Seter et al. 2018; Vestby 2019). They can also serve as entry points for policy coordination and cooperation, hence facilitating more peaceful relations between social groups (including states). This insight counters one-sided, determinist narratives of environment-conflict links that pave the way for a securitisation of environmental issues, a stigmatisation of the Global South, and limited attention (and support) for peaceful adaptation (Barnett 2009; Methmann and Oels 2015; Verhoeven 2014).

Secondly, the study of international rivalries has so far hardly paid any attention to environmental factors and especially environmental cooperation (Rasler et al. 2013), but would be well advised to do so. Contrary to realist theory, which is still very popular in this research field (Akcinaroglu et al. 2014), such cooperation can facilitate reconciliation and eventually rivalry termination, if only to a certain degree and in certain contexts.

Thirdly, as environmental cooperation can be a driver of more peaceful relations between states, it should be given more weight as an independent variable by research on global environmental politics and international relations. Currently, research mostly considers

environmental cooperation as the outcome to be explained (Young 2016) or measures its impact on actual environmental performances (Peters et al. 2017).

Fourthly, environmental cooperation is an important factor in post-conflict societies, not only to provide resource-related services and sustain livelihoods, but also to build understanding and trust between (former) adversaries. In line with current debates about liberal, local and hybrid peacebuilding (Mac Ginty and Richmond 2016), encounters with and even support by external (often international) peacebuilding operations provide a mixed blessing (Grech-Madin et al. 2018; Krampe and Gignoux 2018). They can supply financial resources, mediation and (international) attention, but also undermine the customary, socio-economic and spiritual foundations of joint resource management at the local level.

Fifthly, environmental cooperation — particularly on water conservation, land management and environmental education — can serve to prevent and mediate local disputes, and should hence play a more prominent role in political science research on small-scale conflicts (Almer et al. 2017; Pierskalla and Hollenbach 2013). This would also echo calls for international relations researchers to study dynamics of peace and cooperation rather than conflict and violence (Diehl 2016). In order to do so, however, research needs to move beyond rationalist-positivist ontologies that still characterise especially quantitative studies on the issue (Ide 2016b).

Together, these insights hopefully inspire further research on environmental peacemaking and peacebuilding and related fields of research, but also impact public debates and political decisions. Violent conflict and environmental degradation are two key challenges of the 21st century, so assessing their interactions and addressing them remains an important task for research and policy.

References:

Abukhater, Ahmed (2013): *Water as a catalyst for peace: transboundary water management and conflict resolution*. London: Earthscan.

Acharya, Amitav and Barry Buzan (eds.) (2009): *Non-Western international relations theory*. London: Routledge.

Adams, Courtland, Tobias Ide, Jon Barnett and Adrien Detges (2018): Sampling bias in climate-conflict research. *Nature Climate Change* 8(3), p. 200-203.

Adano, Wario, Ton Dietz, Karen M. Witsenburg and Fred Zaal (2012): Climate change, violent conflict and local institutions in Kenya's drylands. *Journal of Peace Research* 49(1), p. 65-80.

Adler, Emanuel (1997): Imagined (security) communities: cognitive regions in international relations. *Millennium* 26(2), p. 249-277.

Aggestam, Karin and Anna Sundell (2016): Depoliticizing water conflict: functional peacebuilding in the Red Sea–Dead Sea Water Conveyance project. *Hydrological Science Journal* 61(7), p. 1302-1312.

Akcinaroglu, Seden, Elizabeth Radziszewski and Paul F. Diehl (2014): The effects of rivalry on rivalry: accommodation and the management of threats. *Foreign Policy Analysis* 10(1), p. 81-100.

Alatout, Samer (2006): Towards a bio-territorial conception of power: territory, population, and environmental narratives in Palestine and Israel. *Political Geography* 25(6), p. 601-621.

Ali, Saleem H. (2007): A natural connection between ecology and peace? In: Ali, Saleem (ed.), *Peace parks: conservation and conflict resolution*. Cambridge: MIT Press, p. 1-18.

Ali, Saleem H. (2011): The instrumental use of ecology in conflict resolution and security. *Procedia Social and Behavioral Sciences* 14(9), p. 31-34.

Allouche, Jeremy and Paul Jackson (2018): Zones of peace and local peace processes in Côte d'Ivoire and Sierra Leone. *Peacebuilding* online ahead of print.

Almer, Christian, Jérémy Laurent-Lucchetti and Manuel Oechslin (2017): Water scarcity and rioting: disaggregated evidence from Sub-Saharan Africa. *Journal of Environmental Economics and Management* 86(4), p. 193-209.

Amster, Randall (2014): Teaching to the test: climate change, militarism, and the pedagogy of hopefulness. *Journal of Peace Education* 11(3), p. 267-278.

Autesserre, Séverine (2017): International peacebuilding and local success: assumptions and effectiveness. *International Studies Review* 19(1), p. 114-132.

Bächler, Günther (1998): Why environmental transformations causes violence: a synthesis. *Environmental Change and Security Project Report* 4(1), p. 24-44.

Bächler, Günther, Volker Böge and Stefan Klötzi (1996): *Kriegsursache Umweltzerstörung: Ökologische Konflikte in der Dritten Welt und Wege ihrer Bearbeitung*. Chur: Rüegger.

Barkin, J. Samuel (2011): Degradation and cooperation on the high sears: the case of international fisheries managemet. In: Dinar, Shlomi (ed.), *Beyond resource wars: scarcity, environmental degradation and international cooperation*. Boston: MIT Press, p. 141-163.

Barnett, Jon (2009): The price of peace (is eternal vigilance): a cautionary editorial essay on climate geopolitics. *Climatic Change* 96(1), p. 1-6.

Barnett, Jon (2018): Global environmental change I: climate resilient peace? *Progress in Human Geography* online ahead of print.

Barquet, Karina (2015): "Yes to Peace"? Environmental peacemaking and transboundary conservation in Central America. *Geoforum* 63(1), p. 14-24.

Barquet, Karina, Päivi Lujala and Jan Ketil Rød (2014): Transboundary conservation and militarized interstate disputes. *Political Geography* 42(1), p. 1-11.

Bentrovato, Denise (2017): History textbook writing in post-conflict societies: from battlefield to site and means of conflict transformation. In: Psaltis, Charis, Mario Carretero and Sabina Čehajić-Clancy (eds.): *History teaching and conflict transformation: social psychological theories, history teaching and reconciliation*. Houndmills: Palgrave Macmillan, p. 37-76.

Berger, Rachel (2003): Conflict over natural resources among pastoralists in northern Kenya: A look at recent initiatives in conflict resolution. *Journal of International Development* 15(2), p. 245-257.

Björkdahl, Annika and Kristine Höglund (2013): Precarious peacebuilding: friction in global-local encounters. *Peacebuilding* 1(3), p. 289-299.

Boelens, Rutgerd, Jaime Hoogesteger, Erik Swyngedouw, Jeroen Vos and Philippus Wester (2016): Hydrosocial territories: a political ecology perspective. *Water International* 41(1), p. 1-14.

Bogale, Ayalneh and Benedikt Korf (2007): To share or not to share? (Non-)Violence, scarcity and resource access in Somali Region, Ethiopia. *Journal of Development Studies* 43(4), p. 743-765.

Brauch, Hans Günter (2009): Securitizing global environmental change. In: Brauch, Hans Günter, Úrsula Oswald Spring, John Grin, Czeslaw Mesjasz, Patricia Kameri-Mbote, Navnita Chadha Behera, Béchir Chourou and Heinz Krummenacher (eds.): *Facing global environmental change: environmental, human, energy, food, health and water security concepts*. Berlin/Heidelberg: Springer, p. 65-104.

Brock, Lothar (1991): Peace through parks: the environment on the peace research agenda. *Journal of Peace Research* 28(4), p. 407-423.

Bruch, Carl, Carroll Muffett and Sandra S. Nichols (2016): Natural resources and post-conflict governance: building a sustainable peace. In: Bruch, Carl, Carroll Muffett and Sandra S. Nichols (eds.): *Governance, natural resources, and post-conflict peacebuilding*. London: Earthscan, p. 1-31.

Bruch, Carl, Ross Wolfarth and Vladislav Michalcik (2012): Natural resources, postconflict reconstruction, and regional integration: lessons from the Marshall Plan and other reconstruction efforts. In: Jensen, David and Steven Lonergan (eds.): *Assessing and restoring natural resources in post-conflict peacebuilding*. London: Earthscan, p. 343-362.

Brzoska, Michael (2009): The securitization of climate change and the power of conceptions of security. *Security & Peace* 27(3), p. 137-145.

Buhaug, Halvard, Jonas Nordkvelle, Thomas Bernauer Bernauer, Tobias Böhmelt, Michael Brzoska, Joshua W. Busby, Antonio Ciccone, Hanne Fjelde, Erik Gartzke, Nils Petter Gleditsch, Jack A. Goldtsone, Håvard Hegre, Helge Holtermann, Vally Koubi, P. Michael Link, Jasmin S. A. Link, Päivi Lujala, John O'Loughlin, Clionadh Raleigh, Jürgen Scheffran, Janpeter Schilling, Todd G. Smith, Ole Magnus Theisen, Richard S. J. Tol, Henrik Urdal and Nina von Uexkull (2014): One effect to rule them all? A comment on climate and conflict. *Climatic Change* 127(3), p. 391-397.

Bukari, Kaderi Noagah, Papa Sow and Jürgen Scheffran (2018): Cooperation and co-existence between farmers and herders in the midst of violent farmer-herder conflicts in Ghana. *African Studies Review* 61(2), p. 78-102.

Cabada, Ladislav and Sarka Waisova (2018): Environmental cooperation as the instrument of conflict transformation in East Asia. *Journal of Comparative Politics*.

Cain, Allan (2014): Conflict and collaboration for water resources in Angola's post-war cities. In: Weinthal, Erica, Jessica Troell and Mikiyasu Nakayama (eds.): *Water and post-conflict peacebuilding*. London: Earthscan, p. 63-83.

Canter, Marielle and Stephen Ndegwa (2002): Environmental scarcity and conflict: a contrary case study from Lake Victoria. *Global Environmental Politics* 2(3), p. 40-62.

Carius, Alexander (2006): *Environmental peacemaking: environmental cooperation as an instrument of crisis prevention and peacebuilding: condition for success and constraints*. Berlin: Adelphi.

Chojnacki, Sven and Bettina Engels (2013): *Material determinism and beyond: spatial categories in the study of violent conflict. SFB Working Paper 55*. Berlin: SFB.

Clary, Christopher (2015): *Economic stress and international cooperation: evidence from international rivalries*. Boston: MIT.

Collier, Paul and Anke Hoeffler (2005): Resource rents, governance, and conflict. *Journal of Conflict Resolution* 49(4), p. 625-633.

Conca, Ken (2001): Environmental cooperation and international peace. In: Diehl, Paul F. and Nils Petter Gleditsch (eds.): *Environmental conflict*. Boulder: Westview, p. 225-247.

Conca, Ken (2002): The case for environmental peacemaking. In: Conca, Ken and Geoffrey Dabelko (eds.): *Environmental peacemaking*. Baltimore: John Hopkins University Press, p. 1-22.

Conca, Ken and Geoffrey Dabelko (2002a): The problems and possibilities of environmental peacemaking. In: Conca, Ken and Geoffrey Dabelko (eds.): *Environmental peacemaking*. Baltimore: John Hopkins University Press, p. 220-233.

Conca, Ken and Geoffrey D. Dabelko (eds.) (2002b): *Environmental peacemaking*. Baltimore: John Hopkins University Press.

Davies, Lynn (2010): The different faces of education in conflict. *Development Outreach* 53(4), p. 491-497.

Day, Joel, Jonathan Pinckney and Erica Chenoweth (2015): Collecting data on nonviolent action: lessons learned and ways forward. *Journal of Peace Research* 52(1), p. 129-133.

Detges, Adrien (2016): Local conditions of drought-related violence in Sub-Saharan Africa: the role of road- and water infrastructures. *Journal of Peace Research* 53(5), p. 696-710.

Diehl, Paul F. (2016): Exploring peace: looking beyond war and negative peace. *International Studies Quarterly* 60(1), p. 1-10.

Dresse, Anaïs, Itay Fischhendler, Jonas Østergaard Nielsen and Dimitrios Zikos (2019): Environmental peacebuilding: towards a theoretical framework. *Cooperation and Conflict* 54(1), p. 99-119.

Duffy, Rosaleen (2006): The potential and pitfalls of global environmental governance: the politics of transfrontier conservation areas in Southern Africa. *Political Geography* 25(1), p. 89-112.

Durand, Jean-Louis and Sebastian Kaempf (2014): Reimagining communities: opening up history to the memory of others. *Millennium* 42(2), p. 331-353.

Farand, Chloe (2017): Climate change is fuelling wars across the world, UN Secretary General Antonio Guterres says. http://www.independent.co.uk/environment/climate-change-fuelling-global-wars-conflict-world-syria-africa-global-warming-un-secretary-general-a7525431.html (10/01/2018).

Fiedler, Charlotte (2018): On the effects of international support to peace and democracy in Kenya and Kyrgyzstan in the aftermath of interethnic violence. *Journal of Asian and African Studies* 53(2), p. 314-329.

Finnemore, Martha (1996): *National interests in international security*. Ithaca: Cornell University Press.

Flyvbjerg, Bent (2006): Five misunderstanding about case-study research. *Qualitative Inquiry* 12(2), p. 219-245.

Galtung, Johan (1969): Violence, peace, and peace research. *Journal of Peace Research* 6(3), p. 167-191.

Geis, Anna and Wolfgang Wagner (2017): Demokratischer Frieden, Demokratischer Krieg und liberales „peacebuilding". In: Ide, Tobias (ed.), *Friedens- und Konfliktforschung*. Leverkusen: Barbara Budrich, p. 131-159.

Gerring, John (2007): *Case study research: principles and practices*. New York: Cambridge University Press.

Gilmore, Elisabeth A., Lauren Herzer Risi, Elizabeth Tennant and Halvard Buhaug (2018): Bridging research and policy on climate change and conflict. *Current Climate Change Reports* 4(4), p. 313-319.

Gleditsch, Nils Petter (1998): Armed conflict and the environment: a critique of the literature. *Journal of Peace Research* 35(3), p. 381-400.

Goertz, Gary, Paul F. Diehl and Alexandru Balas (2016): *The puzzle of peace: the evolution of peace in the interntional system*. Oxford: Oxford University Press.

Grech-Madin, Charlotte, Stefan Döring, Kyunmee Kim and Ashok Swain (2018): Negotiating water across levels: a peace and conflict "toolbox" for water diplomacy. *Journal of Hydrology* 599(1), p. 100-109.

Haas, Ernst B. (1964): *Beyond the nation state: functionalism and international organization*. Stanford: Stanford University Press.

Homer-Dixon, Thomas (1994): Environmental scarcities and violent conflict - evidence from cases. *International Security* 19(1), p. 5-40.

Homer-Dixon, Thomas and Jessica Blitt (eds.) (1998): *Ecoviolence: links among environment, population, and security*. Lanham: Rowman & Littlefield.

Hsiang, Solomon, Marshall Burke and Edward Miguel (2013): Quantifying the influence of climate on human conflict. *Science* 341(6151), p. 1-14.

Huda, Mirza Sadaqat and Saleem H. Ali (2018): Environmental peacebuilding in South Asia: establishing consensus on hydroelectric projects in the Ganges-Brahmaputra-Meghna (GBM) Basin. *Geoforum* online ahead of print.

Ide, Tobias (2015): Why do conflicts over scarce renewable resources turn violent? A qualitative comparative analysis. *Global Environmental Change* 33(1), p. 61-70.

Ide, Tobias (2016a): Critical geopolitics and school textbooks: the case of environment-conflict links in Germany. *Political Geography* 55(1), p. 61-70.

Ide, Tobias (2016b): Towards a constructivist understanding of socio-environmental conflicts. *Civil Wars* 18(1), p. 69-90.

Ide, Tobias (2017): Space, discourse and environmental peacebuilding. *Third World Quarterly* 38(3), p. 544-562.

Ide, Tobias (2018a): Climate war in the Middle East? Drought, the Syrian civil war and the state of climate-conflict research. *Current Climate Change Reports* 4(4), p. 347-354.

Ide, Tobias (2018b): Does environmental peacemaking between states work? Insights on cooperative environmental agreements and reconciliation in international rivalries. *Journal of Peace Research* 55(3), p. 351-365.

Ide, Tobias (2019): The impact of environmental cooperation on peacemaking: definitions, mechanisms and empirical evidence. *International Studies Review* 21(3), p. 327-346.

Ide, Tobias and Adrien Detges (2018): International water cooperation and environmental peacemaking. *Global Environmental Politics* 18(4), p. 63-84.

Ide, Tobias, Adrien Detges and Timo Leimeister (2017): Securitization through the schoolbook? On facilitating conditions for and audience dispositions towards the securitization of climate change. *Journal of International Relations and Development* online ahead of print.

Ide, Tobias, Jakob Kirchheimer and Denise Bentrovato (2018a): School textbooks, peace and conflict: an introduction. *Global Change, Peace & Security* 30(3), p. 287-294.

Ide, Tobias, Lisa Palmer and Jon Barnett (n.d.): Environmental peacebuilding from below: customary approaches in Timor-Leste. *forthcoming*.

Ide, Tobias, Vakur Sümer and Larissa M. Aldehoff (2018b): Environmental peacebuilding in the Middle East. In: Swain, Ashok and Joakim Öjendal (eds.): *Handbook on environmental conflict and peacebuilding*. London: Routledge, p. 175-187.

Ide, Tobias and Amit Tubi (2019): Education and environmental peacebuilding: insights from three projects in Israel and Palestine. *Annals of the Association of American Geographers* forthcoming.

Independent (2017): US Defence Secretary James Mattis says climate change is already destabilising the world. http://www.independent.co.uk/news/world/americas/us-politics/james-mattis-us-defence-secretary-climate-change-destabilise-world-security-donald-trump-global-a7630676.html (17/09/2017).

Jakobi, Anja P. (2013): Governing war economies: conflict diamonds and the Kimberley Process. In: Jakobi, Anja P. and Klaus Dieter Wolf (eds.): *The transnational governance of violence and crime: non-state actors in security*. Dordrecht: Springer, p. 84-105.

Kelman, Ilan (2012): *Disaster diplomacy: how disasters affect peace and conflict*. London: Routledge.

Keohane, Robert O. and Joseph Nye (2001): *Power and interdependence: world politics in transition*. New York: Longman.

King, Brian E. and Sharon Wilcox (2008): Peace parks and jaguar trails: transboundary conservation in a globalizing world. *Geojournal* 71(4), p. 221-231.

Klein, James P., Gary Goertz and Paul F. Diehl (2006): The new rivalry dataset: procedures and patterns. *Journal of Peace Research* 43(6), p. 331-348.

Koubi, Vally (2019): Climate change and conflict. *Annual Review of Political Science* 22(1), p. 18.11-18.18.

Koubi, Vally, Gabriele Spilker, Tobias Böhmelt and Thomas Bernauer (2014): Do natural resources matter for interstate or intrastate armed conflict? *Journal of Peace Research* 51(2), p. 227-243.

Krampe, Florain and Suzanne Gignoux (2018): Water service provision and peacebuilding in East Timor: exploring the socioecological determinants for sustaining peace. *Journal of Intervention and Statebuilding* online ahead of print.

Krampe, Florian (2017): Towards sustainable peace: a new research agenda for post-conflict natural resource management. *Global Environmental Politics* 17(4), p. 1-8.

Lejano, Raul (2006): Theorizing peace parks: two models of collective action. *Journal of Peace Research* 43(5), p. 563-581.

Leonardsson, Hanna and Gustav Rudd (2015): The 'local turn' in peacebuilding: A literature review of effective and emancipatory local peacebuilding. *Third World Quarterly* 36(5), p. 825-839.

Levy, Marc (1995): Is the environment a national security issue? *International Security* 20(2), p. 35-62.

Linke, Andrew M., John O'Loughlin, J. Terrence McCabe, Jaroslav Tir and Frank D.W. Witmer (2015): Rainfall variability and violence in rural Kenya: investigating the effects of drought and the role of local institutions with survey data. *Global Environmental Change* 34(1), p. 35-47.

Mac Ginty, Roger and Oliver Richmond (2016): The fallacy of constructing hybrid political orders: a reappraisal of the hybrid turn in peacebuilding. *International Peacekeeping* 23(2), p. 219-239.

Mach, Katharine J., Caroline M. Kraan, W. Neil Adger, Halvard Buhaug, Marshall Burke, James D. Fearon, Christopher B. Field, Cullen S. Hendrix, Jean-Francois Maystadt, John

O'Loughlin, Philip Roessler, Jürgen Scheffran, Kenneth A. Schultz and Nina von Uexkull (2019): Climate as a risk factor for armed conflict. *Nature*.

Matthew, Richard, Oli Brown and David Jensen (2009): *From conflict to peacebuilding: the role of natural resources and the environment*. Nairobi: UNEP.

McDonald, Matt (2013): Discourses of climate security. *Political Geography* 33(1), p. 42-51.

Methmann, Chris and Angela Oels (2015): From 'fearing' to 'empowering' climate refugees: governing climate-induced migration in the name of resilience. *Security Dialogue* 46(1), p. 51-68.

Mitchell, Sara McLaughlin and Neda A. Zawahri (2015): The effectiveness of treaty design in addressing water disputes. *Journal of Peace Research* 52(2), p. 187-200.

Moore, Dahlia and Anat Guy (2012): The Israeli–Palestinian conflict: the sociohistorical context and the identities it creates. In: Landis, Dan and Rosita Albert (eds.): *Handbook of ethnic conflict: international perspectives*. New York: Springer, p. 199-240.

Novelli, Mario and Sean Higgins (2017): The violence of peace and the role of education: insights from Sierra Leone. *Compare* 47(1), p. 32-45.

Novelli, Mario, Mieke T. A. Lopes Cardozo and Alan Smith (2017): The 4Rs framework: analysing the contribution of education to sustainable peacebuilding in conflict-affected contexts. *Journal of Education in Emergencies* 3(1), p. 14-43.

Paffenholz, Thania (2014): International peacebuilding goes local: analyzing Lederach's conflict transformation theory and its ambivalent encounter with 20 years of practice. *Peacebuilding* 2(1), p. 11-27.

Peluso, Nancy Lee and Michael Watts (2001): Violent environments. In: Peluso, Nancy Lee and Michael Watts (eds.): *Violent environments*. Ithaca/London: Cornell University Press, p. 3-38.

Peters, Glen P., Robbie M. Andrew, Josep G. Canadell, Sabine Fuss, Robert B. Jackson, Jan Ivar Korsbakken, Corinne Le Quéré and Nebojsa Nakicenovic (2017): Key indicators to track current progress and future ambition of the Paris Agreement. *Nature Climate Change* 7(2), p. 118-122.

Pettersson, Therése and Kristine Eck (2018): Organized violence, 1989–2017. *Journal of Peace Research* 55(4), p. 535-547.

Pettersson, Therése, Stina Högbladh and Magnus Öberg (2019): Organized violence, 1989–2018 and peace agreements. *Journal of Peace Research*.

Pierskalla, Jan H. and Florian M. Hollenbach (2013): Technology and collective action: the effect of cell phone coverage on political violence in Africa. *American Political Science Review* 107(2), p. 207-224.

Pingel, Falk (2008): Can truth be negotiated? History textbook revision as a means to reconciliation. *Annals of the American Academy of Political and Social Science* 617(1), p. 181-198.

Prins, Brandon C. and Ursula E. Daxecker (2008): Committed to peace: liberal institutions and the termination of rivalry. *British Journal of Political Science* 38(1), p. 17-43.

Raleigh, Clionadh and Dominic Kniveton (2012): Come rain or shine: an analysis of conflict and climate variability in East Africa. *Journal of Peace Research* 49(1), p. 51-64.

Rasler, Karen, William R. Thompson and Sumit Ganguly (2013): *How rivalries end*. Philadelphia: University of Pennsylvania Press.

Ratner, Blake D., Ruth Meinzen-Dick, Candace May and Eric Haglund (2013): Resource conflict, collective action, and resilience: an analytical framework. *International Journal of the Commons* 7(1), p. 183-208.

Richmond, Oliver (2011): *A post liberal peace*. London: Routledge.

Richmond, Oliver P. and Roger Mac Ginty (2015): Where now for the critique of the liberal peace? *Cooperation and Conflict* 50(2), p. 171-189.

Ross, Michael (2015): What have we learned about the resource curse? *Annual Review of Political Science* 18(1), p. 239-259.

Roulin, Alexandre, Mansour Abu Rashid, Baruch Spiegel, Motti Charter, Amélie N. Dreiss Dreiss and Yossi Leshem (2017): 'Nature knows no boundaries': the role of nature conservation in peacebuilding. *Trends in Ecology and Evolution* 32(5), p. 305-310.

Salehyan, Idean, Cullen S. Hendrix, Jesse Hamner, Christina Case, Christopher Linebarger, Emily Stull and Jennifer Williams (2012): Social conflict in Africa: a new database. *International Interactions* 38(4), p. 503-511.

Scheffran, Jürgen, Michael Brzoska, Jasmin Kominek, P. Michael Link and Janpeter Schilling (2012): Climate change and violent conflict. *Science* 336(6083), p. 869-871.

Scheumann, Waltina and Omar Shamaly (2016): The Turkish-Syrian friendship dam on the Orontes River: benefits for all? . In: Kibaroglu, Aysegül and Ronald Jaubert (eds.): *Water resources Mmanagement in the Lower Asi-Orontes River Basin: issues and opportunities*. Geneva: GIIDS, p. 125-137.

Schleussner, Carl-Friedrich, Jonathan F. Donges, Reik V. Donner and Hans Joachim Schellnhuber (2016): Armed-conflict risks enhanced by climate-related disasters in ethnically fractionized countries. *PNAS* 113(33), p. 9216–9221.

Schnabel, Albrecht and Hans-Georg Ehrhart (2002): Post-conflict societies and the military: challenges and problems of security sector reform. In: Schnabel, Albrecht and Hans-Georg Ehrhart (eds.): *Security sector reform and post-conflict peacebuilding*. Tokyo: United Nations Uniersity Press, p. 1-15.

Seter, Hanne, Ole Magnus Theisen and Janpeter Schilling (2018): All about water and land? Resource-related conflicts in East and West Africa revisited. *Geojournal* 83(1), p. 169-187.

Starr, Joyce (1991): Water wars. *Foreign Policy* 82(1), p. 17-36.

Steffen, Will, Katherine Richardson, Johan Rockström, Sarah E. Cornell, Ingo Fetzer, Elena M. Bennett, Reinette Biggs, Stephen R. Carpenter, Wim de Vries, Cynthia A. de Wit, Carl Folke, Dieter Gerten, Jens Heinke, Georgina M. Mace, Linn M. Persson, Veerabhadran Ramanathan, Belinda Reyers and Sverker Sörlin (2015): Planetary boundaries: guiding human development on a changing planet. *Science* 347(6223), p. 730-736.

Stoett, Peter (2018): Transnational environmental crime. In: Swain, Ashok and Joakim Öjendal (eds.): *Routledge handbook on environmental conflict and peacebuilding*. London: Routledge, p. 29-41.

The White House (2015): Remarks by the President at the United States Coast Guard Academy commencement. https://obamawhitehouse.archives.gov/the-press-office/2015/05/20/remarks-president-united-states-coast-guard-academy-commencement (10/01/2018).

Theisen, Ole Magnus, Nils Petter Gleditsch and Halvard Buhaug (2013): Is climate change a driver of armed conflict? *Climatic Change* 117(3), p. 613-625.

Thompson, William R. (2001): Identiying rivals in world politics. *International Studies Quarterly* 45(4), p. 557-586.

Troell, Jessica and Erika Weinthal (2014): Shoring up peace: water and post-conflict peacebuilding. In: Weinthal, Erika, Jessica Troell and Mikiyasu Nakayama (eds.): *Water and post-conflict peacebuilding*. London: Earthscan, p. 1-23.

UNDPA and UNEP (2015): *Natural resources and conflict: a guide for mediation practitioners*. Nairobi/New York: UN.

UNEP (2009): *From conflict to peacebuilding: the role of natural resources and the environment.* Nairobi: UNEP.

Unruh, Jon and Rohdri C. Williams (2013): Land: a foundation for peacebuilding. In: Unruh, Jon and Rohdri C. Williams (eds.): *Land and post-conflict peacebuilding*. London: Earthscan, p. 1-20.

van Baalen, Sebastian and Malin Mobjörk (2018): Climate change and violent conflict in East Africa: integrating qualitative and quantitative research to probe the mechanisms. *International Studies Review* 20(4), p. 547-575.

Vasilaki, Rosa (2012): Provincialising IR? Deadlocks and prospects in post-Western IR theory. *Millenium* 41(1), p. 3-22.

Verhoeven, Harry (2014): Gardens of Eden or Hearts of Darkness? The genealogy of discourses on environmental insecurity and climate wars in Africa. *Geopolitics* 19(4), p. 784-805.

Vestby, Jonas (2019): Climate variability and individual motivations for participating in political violence. *Global Environmental Change* 56(1), p. 114-123.

Voigtländer, Nico and Hans-Joachim Voth (2016): Nazi indoctrination and anti-Semitic beliefs in Germany. *PNAS* 112(26), p. 7931–7936.

von Uexkull, Nina, Mihai Croicu, Hanne Fjelde and Halvard Buhaug (2016): Civil conflict sensitivity to growing-season drought. *PNAS* 113(44), p. 12391–12396.

Wilson Center (2015): New G7 report highlights climate change and fragility as a foreign policy priority. www.newsecuritybeat.org/2015/04/g7-report-highlights-climate-change-fragility-foreign-policy-priority/ (12/06/2015).

Witsenburg, Karen M. and Wario R. Adano (2009): Of rain and raids: violent livestock raiding in Northern Kenya. *Civil Wars* 11(4), p. 514-538.

Wolf, Aaron T. (1998): Conflict and cooperation along international water ways. *Water Policy* 1(2), p. 251-265.

Wolf, Aaron T., Shira B. Yoffe and Mark Giordano (2003): International waters: identifying basins at risk. *Water Policy* 5(1), p. 29-60.

Young, Oran R. (2016): *On environmental governance: sustainability, efficiency, and equity*. London: Routledge.

Zeitoun, Mark and Naho Mirumachi (2008): Transboundary water interaction I: reconsidering conflict and cooperation. *International Environmental Agreements* 8(4), p. 297-316.

Ziai, Aram (2012): Postkoloniale Politikwissenschaft: Grundlagen einer postkolonialen politischen Theorie und deren Anwendungsfelder. In: Reuter, Julia and Alexandra Karebtzos (eds.): *Schlüsselwerke der Postcolonial Studies*. Wiesbaden: VS-Verlag, p. 283-296.

Zinnes, Dina (1976): The problem of cumulation. In: Rosenau, James N. (ed.), *In search of global patterns*. New York: Free Press, p. 161-166.

CLISEC Working Papers

Scheffran, J. (2009): *Climate change, Human Security and Societal Instability: Conflict or Cooperation?*, Paper presented at the Synthesis Conference of the Global Environmental Change and Security program, Oslo, Norway, 22-24 June, 2009. Working paper **CLISEC-1**, Research Group Climate Change and Security, University of Hamburg.

Kominek, J. (2009): *Analysing the path of "using cyclical patterns for interpreting the situation" – a different approach using path dependency theory,* submitted. Working paper **CLISEC-2**, Research Group Climate Change and Security, University of Hamburg.

Scheffran, J., Link, P.M. & Schilling, J. (2009): *Theories and Models of the Climate Security Link,* Paper presented at the Conference "Climate Change, Social Stress and Violent Conflict", Hamburg, Germany, 19-20 November, 2009. Working paper **CLISEC-3**, Research Group Climate Change and Security, University of Hamburg.

Kominek, J. (2009): *Each institutionalization elementary is a self-reinforcing process increasing path dependency,* submitted. Working paper **CLISEC-4**, Research Group Climate Change and Security, University of Hamburg.

Kominek, J. (2009): *A new action model – deducing an 'ideal type path dependent' for scenario simulation,* submitted. Working paper **CLISEC-5**, Research Group Climate Change and Security, University of Hamburg.

Link, P.M., Piontek, F., Scheffran, J. & Schilling, J. (2010): *Integrated Assessment of Climate Security Hot Spots in the Mediterranean Region: Potential Water Conflicts in the Nile River Basin,* Paper presented at the Conference "Climate Change and Security", Trondheim, Norway, 21-24 June, 2010. Working paper **CLISEC-6**, Research Group Climate Change and Security, University of Hamburg.

Kominek, J. (2010): Global climate policy reinforces local social path dependent structures: More conflict in the world?*,* in: Scheffran, J., Brzoska, M., Brauch, H.G., Link, P.M. & Schilling, J., *Climate Change, Human Security and Violent Conflict: Challenges for Societal Stability*, Berlin, Springer Verlag, Hexagon Series Vol. 8, pp. 133-147. Working paper **CLISEC-7**, Research Group Climate Change and Security, University of Hamburg.

Kominek, J. (2013): *The pursuit of rational action leads to herding behavior,* submitted. Working paper **CLISEC-8**, Research Group Climate Change and Security, University of Hamburg.

Link, P.M., Piontek, F., Scheffran, J. & Schilling, J. (2010): *Impact of climate change on water conflict and cooperation in the Nile River Basin.* Working paper **CLISEC-9**, Research Group Climate Change and Security, University of Hamburg.

Link, P.M. & Schleupner, C. (2010): How do tourists perceive and accept changes in landscape characteristics on the Eiderstedt peninsula?, *Coastline Reports*, **17**, pp. 133-146. Working paper **CLISEC-10**, Research Group Climate Change and Security, University of Hamburg.

Alwardt, C. (2011): *Wasser als globale Herausforderung: Die Ressource Wasser.* Working paper **CLISEC-11**, Research Group Climate Change and Security, University of Hamburg.

Kominek, J. & Scheffran, J. (2011): Cascading Processes and Path Dependency in Social Networks, in: Soeffner, H.-G. (ed.), *Transnationale Vergesellschaftungen*, Wiesbaden, VS Verlag für Sozialwissenschaften. Working paper **CLISEC-12**, Research Group Climate Change and Security, University of Hamburg.

Schilling, J., Freier, K., Hertig, E. & Scheffran, J. (2011): Climate change, vulnerability and adaptation in North Africa with focus on Morocco, *Agriculture, Ecosystems and Environment*, **156**, pp. 12-26. Working paper **CLISEC-13**, Research Group Climate Change and Security, University of Hamburg.

Schilling, J. & Remling, E. (2011): *Local Adaptation and National Climate Change Policy in Kenya: Discrepancies, Options, and the Way Forward*, submitted. Working paper **CLISEC-14**, Research Group Climate Change and Security, University of Hamburg.

Schilling, J., Akuno, M., Scheffran, J. & Weinzierl, T. (2011): *On arms and adaptation: Climate change and pastoral conflict in Northern Kenya*, submitted. Working paper **CLISEC-15**, Research Group Climate Change and Security, University of Hamburg.

Scheffran, J., Marmer, E. & Sow, P. (2011): Migration as a contribution for resilience and innovation in climate adaptation: Social networks and co-development in Northwest Africa, *Applied Geography*, **33**, pp. 119-127. Working paper **CLISEC-16**, Research Group Climate Change and Security, University of Hamburg.

Marmer, E., Scheffran, J. & Sow, P. (2011): *From security threat to conflict prevention: Integrating migration into climate adaptation policy frameworks in Africa*, submitted. Working paper **CLISEC-17**, Research Group Climate Change and Security, University of Hamburg.

Scheffran, J., Brzoska, M., Kominek, J., Link, P.M. & Schilling, J. (2012): Past and future research on climate change and violent conflict, *Review of European Studies*, **4** (5), pp. 1-13. Working paper **CLISEC-18**, Research Group Climate Change and Security, University of Hamburg.

Link, P.M., Piontek, F., Scheffran, J. & Schilling, J. (2012): *On foes and flows: Vulnerabilities, adaptive capacities and transboundary relations in the Nile River Basin in times of climate change*, *L'Europe en formation*, **365**, pp. 99-138. Working paper **CLISEC-19**, Research Group Climate Change and Security, University of Hamburg.

Link, P.M., Brzoska, M., Maas, A., Neuneck, G. & Scheffran, J. (2012): *Report on the conference "Geoengineering the Climate: An Issue for Peace and Security Studies?"*. Working paper **CLISEC-20**, Research Group Climate Change and Security, University of Hamburg.

Yang, L., Zhang, C. & Ngaruiya, G.W. (2012): Water Risks and Urban Responses under a Changing Climate: A Case Study of Hong Kong, *Pacific Geographies*, **39**, pp. 9-15. Working paper **CLISEC-21**, Research Group Climate Change and Security, University of Hamburg.

Link, J.S.A. & Link, P.M. (2012): *Modeling the linkage between climate change and violent conflict*, submitted. Working paper **CLISEC-22**, Research Group Climate Change and Security, University of Hamburg.

Ngaruiya, G. & Scheffran, J. (2012): Reducing climate adaptation deficits using revolving fund network schemes in rural areas of Kenya: Case study of Loitoktok district (revised version), *African Journal of Economic & Sustainable Development*, **2** (4), pp. 347-362. Working paper **CLISEC-23**, Research Group Climate Change and Security, University of Hamburg.

Gioli, G. (2012): *Field Trip Report: Gender and Environmental Migration in the Karakoram Region*. Working paper **CLISEC-24**, Research Group Climate Change and Security, University of Hamburg.

Link, P.M., Kominek, J. & Scheffran, J. (2012): Impacts of sea level rise on the coastal zones of Egypt*, Mainzer Geographische Studien*, **55**, pp. 79-94. Working paper **CLISEC-25**, Research Group Climate Change and Security, University of Hamburg.

Ide, T. & Scheffran, J. (2013): *Climate Change: Source of Conflict or Promoter of Cooperation?,* submitted. Working paper **CLISEC-26**, Research Group Climate Change and Security, University of Hamburg.

Yang, L., Scheffran, J., Qin, H. & You, Q. (2014): Climate-related Flood Risks and Urban Responses in the Pearl River Delta, China*, Regional Environmental Change*, **15** (2), pp. 379-391. Working paper **CLISEC-27**, Research Group Climate Change and Security, University of Hamburg.

Ide, T., Schilling, J., Link, J.S.A., Scheffran, J., Ngaruiya, G. & Weinzierl, T. (2014): On Exposure, Vulnerability and Violence: Spatial Distribution of Risk Factors for Climate Change and Violent Conflict Across Kenya and Uganda, *Political Geography*, **43** (1), 68-81. Working paper **CLISEC-28**, Research Group Climate Change and Security, University of Hamburg.

Boege, V. (2015): *Climate change, migration (governance) and conflict in the South Pacific,* submitted. Working paper **CLISEC-29**, Research Group Climate Change and Security, University of Hamburg.

Scheffran, J. (2015): *Climate Change as a Risk Multiplier in a World of Complex Crises,* Working paper prepared for the Conference *Planetary Security*, The Hague, Nov. 2-3, 2015. Working paper **CLISEC-30**, Research Group Climate Change and Security, University of Hamburg.

Link, P.M., Scheffran, J. & Ide, T. (2016): Conflict and cooperation in the water-security nexus: a global comparative analysis of river basins under climate change, *Wiley Interdisciplinary Reviews: Water*, **3** (4), 495-515. Working paper **CLISEC-31**, Research Group Climate Change and Security, University of Hamburg.

Link, J.S.A. (2017): *Local approximation of path-dependent behavior: the SHE-Model,* submitted. Working paper **CLISEC-32**, Research Group Climate Change and Security, University of Hamburg.

Link, P.M., Scheffran, J. & Shu, K. (2018): They sow the wind and reap bioenergy – implications of the Energiewende on coastal communities in Schleswig-Holstein, Germany, in: Heidkamp, C.P. & Morrissey, J. (2018), Towards Coastal Resilience and Sustainability, Taylor & Francis. Working paper **CLISEC-33**, Research Group Climate Change and Security, University of Hamburg.

Link, P.M. & Scheffran, J. (2019): *Modeling of water allocation schemes in the Nile River Basin for changing water availability,* submitted. Working paper **CLISEC-34**, Research Group Climate Change and Security, University of Hamburg.

Ide, T. (2019): Environmental Peacemaking and Environmental Peacebuilding in International Politics. Working paper **CLISEC-35**, Research Group Climate Change and Security, University of Hamburg.