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Global climate security governance: A case of institutional and ideational fragmentation

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Abstract

In recent years climate change has become integrated into pre-existing, but fragmented structures of global security governance. In this article I argue that while institutional fragmentation of global climate security governance is not automatically problematic the phenomenon of ideational fragmentation that often goes with it is highly disadvantageous to achieving climate security for people. This is because the preferences of a diverse group of security organisations/actors (in this article the Organization for Security and Co-operation in Europe, the North Atlantic Treaty Organization, the European Union and the United States/Pentagon) are often vastly removed from the global agenda set by the United Nations and their expressed preference for understanding climate security in terms of human security. I suggest that the first step towards overcoming ideational fragmentation would have to be the advancement of a universal definition of climate security by an authoritative source, however, given that security is for many actors a matter of perception the chances of overcoming ideational fragmentation are slim.

Keywords

Climate change, fragmentation, securitisation, sustainable development, human security

Introduction

Since publication of the Intergovernmental Panel on Climate Change's (IPCC) fourth assessment report in 2007 climate change is widely believed to be a serious threat to most of the world's ecosystems and even to civilisation. An array of politicians, non-governmental organisations and academics alike, have declared that climate change is now such a serious issue that it is a threat to human, national or international security. By contrast I argue in this article that the "securitisation" of climate change is not an invariably good development, because it does not necessarily equate to a securer climate for people. This assertion has been made before by scholars who have examined conflicting discursive constructions of climate security.¹ While such work is important, a focus on competing discourses does not explain *why* different security organisations/actors are likely to focus on one discourse over another. In order to uncover this I pursue a different line of enquiry and examine climate security through the lens of global governance. I argue that a focus on a twofold fragmentation of global climate security governance into institutional and ideational fragmentation allows me to uncover the reasons for why diverse actors are likely to adopt distinct frames of climate security. The evident and –in all likelihood- insurmountable ideational split coupled with the fact that not all interpretations of climate security lead to a safer climate for people form the basis for my critique of the securitisation of climate change.

Although increasingly popular² the term global governance evades exact definition. In the academic study of environmental politics it can refer either to high degrees of

institutionalisation, which is to say regimes operating at the global level³, or more loosely to the totality of norms, regimes, principles and values dealing with one global environmental issue involving multiple actors.⁴ Although the looser definition already highlights that different actors are likely to have diverse views on how any given global environmental issue ought to be addressed the relevant literature tends to recognise institutional fragmentation only⁵, when we are in fact dealing with a two-fold fragmentation of global environmental governance consisting of institutional fragmentation and ideational fragmentation.

Institutional fragmentation refers to the phenomenon that a multitude of different actors are engaged in the provision of global environmental governance, while the concept of ideational fragmentation captures the observation that an actor's identity, especially the actor's relative strengths and weaknesses are likely to influence how they conceive of an issue. In this article I utilise this two-fold fragmentation to problematise global climate security governance. In a nutshell I am able to demonstrate that while institutional fragmentation of global climate security governance is not automatically problematic the phenomenon of ideational fragmentation is highly disadvantageous to achieving climate security for people.⁶ This is because the preferences of a diverse group of security organisations/actors (in this article the Organization for Security and Co-operation in Europe, the North Atlantic Treaty Organization, the European Union and the United States/Pentagon) are often vastly removed from the global agenda set by the United Nations and their expressed preference for understanding climate security in terms of human security.

My argument proceeds as follows. I begin with a discussion of three different frames of climate security, including the case for understanding climate security as human security; this is followed by an examination of global climate security governance, specifically I locate the different climate security frames/discourses within the UN, NATO, the OSCE, the EU, and the US/Pentagon respectively. In a third section I critically evaluate institutional and

ideational fragmentation. On this basis I argue in the conclusion against the securitisation of climate change.

Before any of this, however, a word on the selection of security actors/organisations featured in this article. Although non-governmental organisations and think-tanks are also active in the area of climate security, they are not separately examined here because, other than influencing official policy, they remain for now at the margins of climate security practice. Furthermore, I am conscious of the fact that –with the exception of the UN- all security actors examined are located in the global north, yet climate change is expected to affect the global south most acutely. Indeed a host of natural disasters in South East Asia and desertification in Africa are already attributed to a changing climate.⁷ This raises the question why not include the African Union (AU) and the Association of Southeast Asian Nations (ASEAN) into this study? The answer is that neither organisation has successfully securitised climate change,⁸ which –at a minimum- would involve rhetorical recognition of climate change as a threat as well as action taken to address the threat (cf. below). Climate change is featured on the AU's agenda only since 2009, when in the run-up to COP15 in Copenhagen the newly established Committee of the African Heads of State and Government on Climate Change put forward Africa's common position on climate change. This position has since been developed by the Climate Change and Desertification Unit (CCDU) situated within the AU's Department of Rural Economy and Agriculture. CCDU regards climate change as 'the defining development challenge of our time'.⁹ The biggest concern for the CCDU and by the extension the AU clearly is the injustice of the fact that Africa has done virtually nothing to contribute to the creation of this 'menacing global threat' (climate change is referred to as 'the climate externality'), but faces the brunt of its devastating consequences.¹⁰ The objective of the common climate strategy is to put this right. In practice this means that they are calling on the developed world to a) support a new climate change

regime and b) to financially facilitate adaptation and mitigation initiatives in Africa, Africa itself as a non-guilty party can do little and therefore does little about climate change.

Other bodies within the AU also do not securitise climate change. In spite of the expectation by many conflict scholars that Africa will suffer the majority of all climate conflicts/wars, AU's Department for Peace and Security in charge of 'ending conflict and sustaining peace'¹¹ makes no reference to climate change. With some trepidation I suggest that one possible explanation for this absence might be that the PSC is dealing with so many acute and ongoing conflicts in the region that it has neither the time nor –if one is to believe David Campbell's discourses of danger thesis, whereby security actors actively pursue threat narratives to ensure their own relevance into the future-¹² the need to worry about potential future triggers of conflict.

ASEAN is generally more aware of the importance of an intact natural environment than the AU. The ASEAN Socio-Cultural Community contains a Ministerial Meeting on Environment (AMME); the heads of governments have repeatedly stressed their commitment to a new UNFCCC global binding carbon regime¹³; ASEAN has put forward a Joint Declaration on Sustainable Development (JDSD) in 2007 and in 2012 an ASEAN Action plan on Joint Response to Climate Change (JRCC). Action on climate change in these terms has been reaffirmed most recently in the 2014 annual foreign ministers' meeting (AMM) in their joint communiqué.¹⁴ Even so the issue is not securitised. In the JDSD climate change is mentioned only in passing, while the main causes of unsuitability are more local concerns such as the impact of population growth, associated habitant loss, pollution, urbanisation and energy provision.¹⁵ The JRCC, in turn, strikes a cautious note when it declares that 'climate change in the region *may* have adverse impacts on livelihoods and communities', and goes on to lay out areas for cooperation between member states that aim to foster both adaptation and mitigation.¹⁶

ASEAN's Defence Ministers Meeting (ADMM) situated in ASEAN's Political and Security Community pillar now increasingly make reference to non-traditional security threats, however, it is not specified what these actually are. Climate change is certainly not singled out as such a threat. Noteworthy is perhaps that ADMM Three-Year-Work Programme 2014-2016 seeks to increase action on military-to-military cooperation on trans-boundary security issues¹⁷. This suggests that they foresee a role for the military on environmental issues which could give way to a climate security strategy by ASEAN's militaries in line with those of other militaries (see below). For the time being, however, this is not the case and neither the AU nor ASEAN are investigated further in this article.

Theoretical frames for understanding climate security

Perhaps the single most important thing to understand about climate security is that it does not refer to one concept; instead proponents and critics have different and often competing ideas on the source of the threat, on who is to be defended and on who is the most appropriate provider of security.¹⁸ For this reason, I have suggested in a previous publication that climate security is better cast as a debate as opposed to a concept.¹⁹ Although policy-makers are unlikely to know the intricacies of academic debates— and indeed crossover between definitions is possible— for the purposes of analytical clarity it is useful to briefly consider the relevant literature and to separate out distinct meanings of climate security. At least three competing frames or discourses of climate security can be drawn out.

Climate change as a source of violent conflict

The first frame centres on the linkage of climate change and violent conflict. In Environmental Security Studies (ESS) environmental conflict has a long tradition and

competing theories on what precisely leads to conflict exist.²⁰ Most prominently perhaps environmental scarcity theorists, argue that scarcity of renewable resources, when coupled with social effects has the potential to lead to violent conflict.²¹ Climate change ‘increases the scarcity of the regular patterns of rainfall and temperature on which farmers rely.’²² In the policymaking world the climate-conflict linkage has had a lot of purchase. One reason for this is the issue of “climate refugees”, which is to say persons displaced by climate induced change. Large numbers of “climate refugees” are expected to exacerbate local grievances, or in other words, social effects, triggering violent conflict.²³

The linkage between climate and conflict has meant that a lot of emphasis is placed on early warning, conflict prevention and so-called environmental peacebuilding, the latter is the theory (and practice) that shared environmental problems can lead to cooperation even between enemies.²⁴ A striking finding from within ESS is that media-hyped water wars are less likely than inter-state cooperation on water issues. An example often given are the so-called ‘picnic table’ talks in 1957 between Jordan and Israel managing the shared Jordan River even though the two countries were technically at war.²⁵

The referent object in the climate conflict nexus is traditionally the state, though of late conflict has found its way into human security research, with scholars acknowledging that conflict is an important source of deprivation and insecurity.²⁶

Climate change as a threat to national security

The second frame of environmental/climate security centres on the role of the military in climate security. This thinking dates back to the end of the Cold War. In the US the Clinton administrations elevated environmental degradation to a threat to national security, and the Department of Defense (DOD) soon established itself as the largest and most important

environmental security actor domestically and internationally. Domestically it focused on cleaning up a huge Cold War environmental toxic legacy in order to ensure compliance with new legislation and also continued military readiness. Internationally, the focus was with assisting other countries to clean-up their environmental legacy, notably in Russia, where the US enabled nuclear waste stored in decommissioned nuclear sub-marines in the Murmansk area to be made safe. Such environmental cooperation was also considered a vehicle for peace and trust building between the former enemies, and formed part of Defense Secretary Perry's wider strategy of 'preventative defense'.²⁷

The view of climate security by many of the world's militaries today is similar to this. Climate change is considered a security issue not only because its 'projected impacts [...] will likely serve as catalysts for conflict'²⁸, but also because rising sea-levels and extreme weather events threaten military bases, potentially leaving the military unable to adequately provide national security.²⁹ Climate change, in short is considered a 'threat multiplier'.³⁰ One such threat is the increased frequency and vehemence of natural disasters; and defence academics and the military increasingly promote the role of the military in environmental disaster alleviation.

Climate change as a threat to the individual

The third frame of climate security is much broader than the other two and traditionally does not emphasise the climate-conflict-nexus. Instead, climate change is believed to have such serious negative consequences for human security that its destructiveness is comparable to that of war, and therefore should be treated equally seriously.³¹ Human security is commonly defined as 'first, safety from such chronic threats as hunger, disease and repression. And second, it means protection from sudden and hurtful disruptions in the patterns of daily lives.'³² In this framing of climate security, the threat stems from the dangers of

environmental degradation caused by climate change including crop failure, the rise and spread of dangerous pathogens, food insecurity, adverse weather conditions all of which are non-violent in character. Of late, however, conflict has become a concern for proponents of human security in particular because empirical evidence suggests that conflict damages infrastructure and institutions vital for adaptation to climate change.³³ Proponents of climate security as human security argue that because climate change does not respect territorial boundaries, true climate security as a state of being³⁴ can only be achieved if the issue is moved away from the traditional state-centric threat and defence nexus. This is not to suggest that states can't be instrumental in the delivery of climate security, indeed the preferred vehicle for its achievement is a new binding global carbon regime.

Politicisation or securitisation?

Although human security emerged in the policy-making world and much of the UN's work is informed by it, solutions to climate security as human security acutely raise the question of when is an issue 'securitised' as opposed to simply politicised?³⁵ One accepted definition of evidence of securitisation clearly depends on *who* securitises— an issue is considered securitised if it is treated as such by a state's pivotal security institutions, i.e. the military and/or the police.³⁶ While this limits securitisation to certain type of actors, another definition holds that evidence of successful securitisation requires the adoption of extraordinary measures to deal with a threat³⁷, or in other words with a specific type of action. Proponents of climate security as human security tend to challenge this latter notion of securitisation.³⁸ Although many such proponents would presumably like to see exceptional measures (e.g. legislation banning industry and personal transport, or a carbon regime policed and enforced by the UN Security Council) policy-makers sharing this definition tend to promote non-exceptional measures- i.e. a standard global environmental regime to combat the climate

threat. The objections of traditionally minded observers (as regards security) that the latter is not securitisation³⁹ can be countered with the suggestion that if –as many non-traditional security scholars hold– securitisation is a social construction⁴⁰ and thus ‘what actors make of it’, then what is and is not securitisation is down to the practitioner of security and not to the observer.⁴¹ In other words, observers are in no position to argue that the action taken with reference to the securitising move (i.e. the rhetorical identification of climate change as an existential threat) must take a specific form (i.e. be exceptional); what matters instead is that following the rhetorical acknowledgement of threats, securitising agents *act/change their behaviour* and also that the action taken is justified with reference to the threat they themselves identified as part of the securitising move.⁴²

The case for climate security as human security

The preceding discussion serves to highlight that participants of the climate security debate disagree –among other things- on *who* should be secured and from *what* precisely. We have seen that referent objects of security include nation-states, military readiness and human beings, while the interpretation of threat includes everything from war to non-violent long term environmental degradation triggered by climate change. Given that the aim of this article is the problematisation of the securitisation of climate change through a focus on global governance it remains to briefly discuss the moral value of the policy agendas supported by each frame of climate security. With a view to environmental security, I have done this in the final chapter of my 2010 book *Security and the Environment*, and I will draw on this work in this section. Almost all moral theories identify objective human well-being as the most fundamental unit of value. In other words the value of things depends on whether or not they serve human well-being. That a functioning healthy natural environment and human well-being are interdependent, and the former therefore valuable, has been extensively

recorded by the Millennium Ecosystem Services assessment that identifies four distinct ecosystem services all of which foster human well-being in multiple ways.⁴³ Given that not all frames of climate security identify human beings or ecosystem services as referent objects of security, we can say that not all corresponding climate security policies are morally right processes. I concede that while national environmental/climate security policy has the potential to increase the well-being of those people living within these states (including by averting potential violent environmental conflict and/or by having a green military) such a policy agenda fails to recognise the transnational nature of environmental issues notably climate change and is therefore not a long-term solution. Moreover the achievement of environmental/climate security at state level can often only be achieved at the expense of people elsewhere, including by securing scarce resources from abroad (if necessary by force), by keeping unwanted “climate refugees” out and by maintaining a military along with its often sizable –and from a climate conscious standpoint problematic- ‘carbon boot-print’. Accordingly, only environmental/climate security as human security avoids these pitfalls because it ‘[...] stresses the fundamental interdependence between well-being and a healthy environment. [Rendering it] a morally right process, on account of its being the only policy agenda properly conducive to human well-being.’⁴⁴

The fragmented nature of global climate security governance

In this section I aim to match up the distinct security organisations/actors with the different frames of climate security. For ease of navigation I will address each actor in turn.

The UN

The size and nature of the UN as a global actor means that it is at the heart of a global governance approach to climate security. Yet the UN is hardly a unitary actor; it encompasses –among others- the United Nations Framework Convention on Climate Change (UNFCCC), the UN Security Council (UNSC) as well as a number of separate bodies such as the United Nations Development Programme (UNDP) and the Environment Programme (UNEP) all of which have a view on/are active in the area of climate security. The notable difference between these is that whereas the policies of the first two are negotiated by their member states, the latter possess clear operational mandates in line with general UN policy. This is important, because wherever member states dominate policy action we encounter a myriad of views on the meaning of, and necessary action to combat, climate change. Consequently within the UNSC debates on the subject in 2007 all three of the climate security frames were present and no consensus could be reached, while the UNFCCC negotiations are notoriously protracted processes. This said, however, it is also the case that the UN as a whole is informed by the UN Charter. Article 1 describes the role of the UN as founded on the promotion of peace and security and solving humanitarian issues. This means that all of the UN's work is underpinned by the idea of the equality of human beings and the desire to enhance well-being; taken together these are a testimony to its humanitarian character. The UN like other humanitarian organisations (e.g. Oxfam and the Red Cross) is concerned with climate change primarily because of the manifold threats it poses to individuals, especially vulnerable communities within states that lack strong capacity to address threats to human security. The general assumption is that inhabitants of less and least developed countries will be the hardest hit by climate change. Not only are they geographically placed in already warm and dry regions of the south where the effects of climate change will be (or are being) felt most intensely, but these states also do not have the resources needed to adapt to climate

change. That the UN as a whole is clearly informed by climate security as human security is nowhere more obvious than in the UN General Assembly's resolution A/63/281 on *Climate Change and its possible security implications* (adopted June 2009), which places heavy emphasis on sustainable development and invites all UN bodies to integrate climate change into their respective mandates.⁴⁵ More recently the UN reiterated its commitment to climate security as human security in its 2013 report outlining a *New Global Partnership: Eradicate Poverty and Transform economies through sustainable development*. And we can find evidence of this commitment to climate security as human security even within the UNSC. A presidential statement released after a second debate in 2011 tried to collect the disparaging views of its participants into one document; telling is that it repeatedly stresses the need for sustainable development to combat climate change and the security implications of climate change for individuals.

Within UNEP and UNDP the commitment to climate security as human security is indisputable. UNEP has been active in raising awareness of the consequences of climate change understood along these lines. The programme is active in many environmental disaster areas and it operates in the area of conflict prevention, and environmental peacebuilding. Some of this work is done through the Disaster and Conflicts Programme which 'seeks to minimize environmental threats to human well-being from the environmental causes and consequences of conflicts and disasters.'⁴⁶ UNEP is also a partner to the multi-agent *Environment and Security Initiative* (ENVSEC), which focuses on 'transforming risks into cooperation', or in other words on environmental peacebuilding.⁴⁷ UNDP and United Nations Economic Commission for Europe also are partners to ENVSEC.

Perhaps the most important agency in UN climate security is the conference of the parties (COP) as the highest decision-making body of the Framework Convention on Climate Change (UNFCCC) which aims to bring about a post-Kyoto carbon emissions reduction

regime. If securitisation is defined permissively as ‘what actors make of it’, it means that even if such a regime does not include extraordinary enforcement mechanisms and/or necessitates extraordinary new laws in signatory countries to ensure compliance, its creation would still equate to securitisation, provided the UN continues to rhetorically link climate change and security in the way it does now. Although progress towards such a regime is tediously slow and frustrating the UN Climate Change Conference in Doha, Qatar (COP18/CMP8) in December 2012 had as one of its celebrated outcomes the decision to agree on a climate change regime in 2015, while it has also extended the Kyoto framework. The 2013 conference in Warsaw, in turn, made progress on emissions-cuts from deforestation. The 2014 conference in Lima negotiated a plan that, for the first time, commits all countries to cut their greenhouse gas emissions and keeps governments on track towards a 2015 universal agreement.

NATO

NATO has been interested in the linkage between environment and security since 1969, when it established the Committee on the Challenges of Modern Society (CCMS) ‘as a unique forum for co-operation on issues inter alia trans-boundary environmental protection and environmental problems in general.’⁴⁸ This programme was stepped up in importance with the ending of the Cold War and the securitisation of the environment in the US. In 1995 CCMS commissioned a pilot study *Environment & Security in an International Context*. Although this study focused heavily on the possibility of violent environmental conflict, the latter remained a largely academic pursuit, and the alliance’s actual environmental security policy focused mainly on defence-related environmental issues and environmental peace-building. For example, the Russian CCMS mission focused on the safe storage of spent

nuclear fuel retrieved from Russia's decommissioned fleet of nuclear submarines.

Cooperation with the Russians was also seen as a forum for peace-building between former enemies.⁴⁹ As part of the Science for Peace and Security (SPS) Programme, such clean-up partnerships continue to this day. In 2013 NATO made available €20.000 towards recovering radioactive material and restoring the landscape in Vakulenchuk, Ukraine.⁵⁰

However, such clean-up operations are ultimately tied to strategic concerns (i.e. radioactive material falling into the wrong hands), this much is clear from the fact that no comparable plan for post-war environmental clean-up and restoration exists in Afghanistan, that while having suffered war's usual environmental contamination and destruction does not have a nuclear legacy.

Today NATO's primary concern as regards environmental and climate security is the adverse impact of environmental factors on military readiness and their ability to provide national and international security. In October 2009, the SPS established the Defence and Environment Experts Group (DEEG). One of the key projects run under this initiative looks at the 'effects of environmental conditions on soldiers' and focuses on securing soldiers from 'potential exposure to toxic industrial chemicals; biological and radiological substances; climatic and meteorological conditions; and the actions of belligerents with their own agenda.'⁵¹ Another project 'sustainable operational military compounds' looks at the carbon footprint of the military and aims to explore 'the economical and tactical benefits of reducing the consumption and waste footprint of military compounds'.⁵² In large part, however, the latter is driven by concerns over energy supply for military operations, as opposed to a concern with green issues. Energy security is crucial to NATO's overall environmental security strategy, because 'environmental factors can affect energy supplies to both populations and military operations, making energy security a major topic for concern.'⁵³ Indeed, NATO's fervent interest in an Arctic altered by climate change can be explained in

terms of energy security, with some analysts claiming that ‘up to 13 percent of the world’s undiscovered oil reserves and almost one-third of the world’s undiscovered natural gas reserves are located in the Arctic region’.⁵⁴

As a military organisation NATO also has an almost “natural” interest in the possibility of (climate induced) conflict. Alongside other regional actors it is also a partner to ENVSEC. To-date NATO has lead or has joint-lead on 34 ENVSEC projects, many of which concerned water safety and quality in Central Asia and the Caucasus and on fostering dialogue between parties to a conflict.⁵⁵

Lastly NATO is heavily involved in coordinating civil emergency planning which increasingly includes responses to environmental disasters. The Euro-Atlantic Disaster Response Coordination Centre (EARDCC) was launched following the earthquakes in Turkey and Greece in the late 1990s.⁵⁶ Over the past few years EARDCC has provided disaster responses to assist, for example, with snow storms in 2012 in Albania and Montenegro, an earthquake in Turkey and floods in Pakistan, both in 2011.⁵⁷

OSCE

The OSCE is with 57 member states in Europe, Central Asia and North-America the world’s largest (trans-) regional security organisation. The OSCE is ‘a forum for political negotiations and decision-making in the fields of early warning, conflict prevention, crisis management and post-conflict rehabilitation’.⁵⁸ Environmental change entered the organisation’s security agenda comparatively early. Already in 2003 its Maastricht Strategy called upon the Office of the OSCE Co-coordinator of Economic and Environmental Activities (OCEEA) to work in the area of early warning and conflict prevention with regards to environmental conflict.⁵⁹ Tellingly conflict prevention and environmental peace-building inform many of the 56

separate ENVSEC projects led or jointly led by the organisation.⁶⁰ The OSCE's Madrid Ministerial Declaration on Environment and Security in 2007 formerly recognised the potential linkage between climate change and conflict and reaffirmed the OSCE's role in conflict prevention, regardless of conflict's origin.⁶¹ The risk of climate induced conflict in the OSCE region is considered particularly high because the region suffers 'from a prevalence of national and regional power struggles; ideological, ethnic, religious, and national tensions; and severe economic, social, or political inequality' all of which are 'immediate drivers of conflict'⁶² that would become all the more acute with climate change. In short the fear is that an already volatile region will become even more unstable as a result of climate change, while the OSCE lacking any military capabilities would be unable to deal with these.

For the purposes of this article it is interesting that the document also recognised climate change as a 'long-term challenge' and acknowledged that 'the United Nations climate process is the appropriate forum for negotiating future global action on climate change, and the OSCE, as a regional security organisation under Chapter VIII of the UN Charter, has a complementary role to play within its mandate in addressing this challenge in its specific region'.⁶³ Whilst climate-conflict prevention is now part of the OSCE's general missions, it is important to realise that because the OSCE is not cemented by a legally binding agreement it has virtually no power to enforce anything and instead relies on the political will of individual member states. In short the OSCE is the weakest institution within the wider global security architecture with no real political power to enforce desired behaviour in member states. Nonetheless the willingness of OSCE countries to participate in environmental missions is quite high and -among other things- the OSCE has facilitated cross-border environmental cooperation ahead of a mining project based in Kyrgyzstan destined to adversely affect (because of its position near the border) water quality in

Kazakhstan. It has facilitated water-cooperation between Moldova and Ukraine in the trans-boundary Dniester/Nistru river basin that is an important source of drinking water, fishing, recreation and hydro-electricity. And it has set up so-called “Aarhus centres” across the participating States in the Caucasus, Central Asia and Eastern Europe, which serve as meeting places and environmental information dissemination platforms for NGOs, state officials and the public.⁶⁴

The EU

The European Security Strategy from December 2003 mentions global warming only in passing and it was not until the so-called Solana Report on *Climate Change and International Security* (2008), written by the High Representative for Common Foreign and Security Policy for presentation to the European Council, that climate security had fully arrived on the EU’s institutional radar. This report highlights in particular the possibility of climate conflict, economic loss, loss of territory and border disputes, thus by and large traditional security concerns.⁶⁵ Considering that Solana was formerly NATO’s Secretary General this is perhaps not surprising; he would have been especially concerned about the lack of military capability in the EU and indeed it was under his leadership that plans for a 50 to 60,000-strong rapid reaction military force were first hatched. *A Report on the Implementation of the European Security Strategy-Providing Security in a Changing World* from later that same year, stresses some of the same points but hints at a more concrete climate security strategy by emphasising the element of cooperation.⁶⁶

Today the EU’s thinking on the connection between climate change and security continues to centre on traditional security concerns including the possibility of climate-induced conflict; if now under the remit of the EU’s wider climate diplomacy policy. A joint

reflection article by the European External Action Service (EEAS) and the services of the Commission argues that climate change ‘acts as a “threat multiplier” exacerbating tensions over land, water, food, and energy prices, thus creating migratory pressures. It serves as a potential catalyst for conflict’.⁶⁷ Considering that the EU, in particular at its southern borders, is already under severe pressure from immigration it is hardly surprising that the EU should be concerned with the possibility of climate-induced migration. Furthermore, despite the EU’s emphasis on common security and defence the conflict in Libya in 2011, and more recently the Ukrainian crisis, have demonstrated once again that the EU stands helpless in the face of overt violent conflict in the European Neighbourhood and areas bordering/near it. Consequently the EU, as a security actor with limited or no military capabilities, is concerned with conflict prevention. Interestingly, however, they recognise that climate insecurity is best addressed as part of wider climate action. ‘[A]t the heart of a successful response is the need to transition to a low carbon sustainable economy and society [...]’⁶⁸ It should be noted that the EU itself is committed to a 20% cut below 1990s levels, and to an 80–95% cut compared to 1990 levels by 2050.⁶⁹ To achieve this, the EU is stepping up its climate diplomacy. One strand of climate diplomacy focuses on convincing other countries, ‘that a robust and ambitious international framework is in their interests and that, their emissions reduction actions need to be implemented and reinforced.’⁷⁰ Another focuses on communicating the inter-linkage between climate change and security in order to ‘raise global awareness of the security risks, and threat-multiplier nature, of climate change, particularly in vulnerable regions.’⁷¹ More recently the Foreign Affairs Council meeting at the Council of Europe reaffirmed the EU’s climate diplomacy policy stressing the importance of the 2015 as the deadline for the signing of a new global carbon emissions reduction regime.⁷² Nevertheless in concrete situations the EU’s use of soft power to drive forward a binding climate regime has in the past been severely hampered by low degrees of both ‘preference cohesion’ and

‘procedural-tactical cohesion’.⁷³ Lisanne Groen and Arne Niemann have shown how during the UN 2009 climate conference in Copenhagen both the EU’s ‘actorness’ and ‘effectiveness’ were hampered by disagreement concerning the EU’s emissions reduction goals, whilst they also seemed unable to easily overcome ‘diverging preferences and solve disagreements’,⁷⁴ with some member states (i.e. Italy, Poland, the Czech Republic) openly blocking progress on the formulation of a common EU position before and during the conference. In other words, despite seemingly good intentions towards reducing climate emissions and providing climate security the EU remains a divided and often weak actor.

The US

Although climate change featured in the 2010 US National Security Strategy (NSS), the US is far behind, for example, the EU when it comes to concrete policies concerning GHG reduction. Infamously the US did not ratify the Kyoto protocol in 2001 and instead launched a number of multi-lateral regimes -including the Asia-Pacific Partnership on Clean Development established in 2005 and the Major Economies Process on Energy Security and Climate Change established in 2007- that conflict with the UNFCCC.⁷⁵ Domestically important legislation governing carbon emissions that might trigger the US to take up global leadership on climate action has not succeeded. Notably *the Clean Energy and Security Act* of 2009 was defeated by the House of Representatives in July 2010. The earlier *Climate Security Act* of 2007 suffered the same fate with Senate Republicans worried it would damage the economy. In June 2013 Obama introduced his latest climate action plan. While it is not strictly necessary that the actual word ‘security’ is used to signify security policy- more important is the logic of existential threats, specifying points of no return-⁷⁶ it is interesting

that Obama's Georgetown University speech from the 23rd of June 2013 did not evoke this logic (especially considering that his Berlin speech from the 19th of the same month did just that). Instead climate change was framed as a public health issue and an economic issue, insofar as natural disasters have cost the economy more than \$110 billion in 2012.⁷⁷ Finally the speech stressed that reducing carbon emissions and moving towards a greener society would reduce dependence on foreign oil, otherwise called energy security.⁷⁸ The plan reiterated Obama's conditional pledge 'to cut emissions by 2020, [and that] America would reduce its greenhouse gas emissions in the range of 17% below 2005 levels *if all other major economies agreed to limit their emissions as well.*'⁷⁹ A target that amounts to 'only a 4% cut in emissions compared with 1990 levels'.⁸⁰ Obama's plan, however, does include the administration's boldest move so far. In an effort to avoid Republican dominated Congress, Obama issued an executive memo to the Environmental Protection Agency (EPA), enabling them to introduce new rules concerning emissions from power plants. The focus on the EPA also explains why there is such a heavy focus on public health in the speech and accompanying plan. The new rules came into force on the 2nd of June 2014, but because states have until 2020 to implement these rules it is impossible to predict what the outcome of these plans is going to be at this stage (especially considering that there is a lot of opposition from coal-burning states). For certain is, however, that climate change is now firmly on the rhetorical agenda of the Obama administration.

US Department of Defense

The US based Center for Climate & Security has compiled a list of those administration officials who have linked climate change to security and how they have done so.⁸¹ Most noticeable is that the list includes an overwhelming number of DOD officials including three former and current Secretaries of Defence: Leon Panetta, Robert Gates and Chuck Hagel.

Indeed the Pentagon's interest in climate security is longstanding. At the height of the war on terror and very much against the ideological beliefs of the Bush administration, the Pentagon's long-range planning office headed by Andrew Marshall commissioned risk analyst scenario writers Peter Schwartz and Doug Randall to examine whether climate change may pose a threat to US security. Their scenario postulated dramatic security implications including endemic 'disruption and conflict' from abrupt climate change.⁸² In the Bush years this report caused controversy between the White House and the DOD, and the former forced the removal of the item from the Pentagon's website. In 2007 when eleven retired US Army and Navy generals and Admirals lead by former Deputy Undersecretary of Defense for Environmental Security Sherri Goodman, published a report on climate security, the attitude towards the environment on part of the Bush administration had shifted, at least in so far as they had realised that continuous denial of the anthropocentric causes of climate change was out of touch with the American population.⁸³ Coupled with the facts that participants on the CNA's Military Advisory Board enjoy a certain amount of gravitas and that many have Republican leanings⁸⁴, this might explain why –unlike with the Schwartz and Randall report- there was no open hostility on part of the White House towards the CNA Corporation's report. In any case the CNA report is ground-breaking only when considered in the context of the anti-green ideology sported by the Bush administrations. Although it does call on the US to set targets for greenhouse gas emissions, not only are no targets specified, but also there is much concern about the resilience of the DOD to climate change. For example, the report argues that 'The Department of Defense should conduct an assessment of the impact on US military security installations worldwide of rising sea-levels, extreme weather events, and other projected climate change impacts over the next 30 to 40 years.'⁸⁵ And it calls for a 'global partnership' on capacity and resiliency building in developing countries, led amongst others by regional commanders.⁸⁶ The updated second CNA report

from May 2014 highlights the operational risk climate change poses to the military: ‘impacts include increased risk to life and safety, injury, and a degrading effect on mission performance. In war and other critical operations, commanders are forced to take larger risks during extreme weather because of the mission, although often with less than ideal results.’⁸⁷

Today the Pentagon is the US government body that takes climate security most seriously. Like other militaries (notably NATO) their interpretation of the meaning of climate security focuses on the impact of climate change on their own ability to provide national security. The DOD’s Climate Change Adaptation Roadmap (CCAR) from 2012, born out of the 2010 Quadrennial Defense Review (QDR), is the clearest statement on DOD’s thinking on the issue so far. It states that climate change will affect the DOD in two main ways. First, it will reshape the military’s ‘operating environment, roles, and missions’, to include the possibility of climate induced violent conflict.⁸⁸ For the time being, the DOD is still involved in gathering evidence and raising awareness. Its Minerva initiative, for example, sponsors University-based social science research on climate induced conflict, with a heavy focus on Africa.⁸⁹

Climate change is also expected to increase the number and frequency DOD’s disaster relief and humanitarian missions. Although not climate induced a recent example is the US military’s response to the Earthquake in Haiti in 2010. Operation Unified Response involved ‘more than 22,000 U.S. troops, 30 ships and 300 aircraft supported the international effort to save lives, deliver/distribute millions of pounds of food and water, restore vital infrastructure and assist long-term recovery efforts.’⁹⁰

Second, the ‘DOD will need to adjust to the impacts of climate change on its facilities, infrastructure, training and testing activities, and military capabilities. The DOD’s operational readiness hinges on continued access to land, air, and sea training and test space, all of which are subject to the effects of climate change.’⁹¹ The concern for the safety of

military installations is especially acute among Navy commanders of low-lying bases susceptible to sea-level rise.⁹² The DOD is also sponsoring research into how dust, forest fires and drought could affect bases in the American Mid-West.⁹³

In addition, the Pentagon is worried about its own energy usage, largely because of the US's dependence on foreign oil, but there is also the realisation that climate change can potentially have a negative impact on energy provision.⁹⁴ In 2009 Congress authorised the creation of the Office of the Assistant Secretary of Defense for Operational Energy Plans and Programs through the Defence Authorization Act. This Office monitors –for the first time– the DOD's energy use and seeks to reduce energy usage for military operations, which accounted for 75% of its overall energy use in 2009. In 2010 the estimate was that the DOD consumed more than 5 billion gallons of fuel in operations.⁹⁵ To ensure energy sufficiency the DOD is not only monitoring its usage; but it has also begun to experiment with alternative, though as I'll shortly show, not necessarily green fuels.

Problems stemming from fragmentation

This article is concerned with the consequences of fragmented global climate security governance. It was argued that fragmentation is in the first instance institutional with a number of different actors/organisations taking charge of the provision of climate security. The analysis suggests institutional fragmentation per se is not a problematic development, because (trans-) regional security actors can in principle share the UN's preference for climate security as human security, which –as argued- is to be regarded as the morally appropriate framing of the issue, on account of it supporting a morally right policy agenda. The case of the OSCE demonstrates that even climate-conflict thinking need not be at odds with the UN's agenda provided that the (trans-)regional organisation's objectives are seen as complementary to that of the UN (indeed this is true for the work of ENVSEC as a whole).⁹⁶

The case of the EU further supports this claim, at least insofar as for the EU climate conflict is part of a wider climate diplomacy that aims at GHG reduction.

While institutional fragmentation is not necessarily problematic it leads to ideational fragmentation, which –at least in the case of climate security– is problematic. Thus informed by their institutional identity distinct security organisations/actors are likely to have different ideas about the nature of the threat, the referent object, and the provider of climate security, ideas that are often far removed from those of the UN and their preference for climate security as human security, that promises to stabilise the climate for people. Ideational fragmentation captures the phenomenon that diverse organisations/actors choice of discourse on any given issue is influenced by *who* they are, specifically by their relative strengths (i.e. what they can (uniquely) offer and do about the issue) and their (perceived) weaknesses (i.e. how precisely does the issue affect them, or even in what sense does the issue render them insecure). The analysis shows that in matters of security (perceived) weaknesses are likely to play the decisive role in the framing of the issue as most security actors/organisations are concerned with a threat because of what it means for them and their ability to ensure/provide security. In the case of global climate security governance we can readily see this. Thus the main reason why the EU prioritises the climate-conflict angle and not the human security angle favoured by the UN is that, as an organisation with no or limited military capabilities, it has repeatedly proved weak in situations of conflict in Europe and elsewhere.⁹⁷ Yet, the EU would do well to be more critical of the climate-conflict-nexus. Not only is climate change as human security more in line with the EU's much written about respect for human rights, but also the EU should be mindful that the 'us versus them' logic informing much climate conflict thinking is potentially harmful to developing states most vulnerable to climate change.⁹⁸ Moreover there is still uncertainty on the positive correlation between climate change and conflict.⁹⁹ If no direct causal linkage between climate and conflict can be

established the EU's aspiration for leadership on global climate action will be weakened. Its leadership potential is already subject to its own performance on these issues (particularly whether it can meet Kyoto targets only through off-setting), and by its ability to speak as a unitary actor.¹⁰⁰ In climate negotiations gone by, its decision-making structure (which demands unanimity of all members' states in setting emission reduction targets) has ensured problematic orientation towards the lowest common denominator.¹⁰¹

The analysis further shows that military organisations are interested in climate change primarily because of what climate change means for them. Although, as in the case of disaster relief, the military can play an important supplementary role in climate security provision, the DOD's interpretation of the issue is ultimately self-serving (the same is true for much of NATO's effort), and it serves to showcase not only the dangers of the world's militaries assuming leadership on climate security as the DOD has done in the US¹⁰², but also the disadvantages of fragmentation. Thus the DOD's and NATO's focus is on military readiness and the safety of military installations from climate change, and not with making the climate safe for people. In other words, the referent object of the DOD's and NATO's climate security strategies differs with their concentration on military readiness strongly from that of the UN. Given that the military cannot defend us against the causes of climatic change this is a problematic development.¹⁰³ Indeed the U.S. military with its huge 'carbon footprint' is one of the largest single emitters of GHG worldwide¹⁰⁴, and a genuine greening of defense would make a difference to GHG. The problem is, however, that its nominal attempts towards investing into alternative fuels are not driven by an interest in climate action, but instead by a concern with energy insecurity and over-dependence on foreign oil. While there might be a realisation that climate/environmental change can adversely affect energy security, for example, extreme weather events can disrupt critical energy infrastructure¹⁰⁵, 'energy security for the DOD means having assured access to reliable

supplies of energy and the ability to protect and deliver sufficient energy to meet operational needs.’¹⁰⁶ As Briggs correctly stresses, this is not ‘a green view of the world’.¹⁰⁷ Thus, in the past the DOD has advocated petroleum production from oil shale as a ‘clean fuel’.¹⁰⁸ And while its own tentative plans to develop such fuels on a massive scale were undermined by Section 526 of the 2007 Energy Act, which prohibits US federal agencies from purchasing fuels derived from unconventional crude that produces higher GHGs than conventional oil, it has lobbied for the loosening of this law by downplaying the environmental impact of such fuels. The issue now has bi-partisan support and that of American Fuel & Petrochemical Manufacturers (AFPM). On June 6th 2013 Senators Manchin (Democrat, West Virginia) and Barrasso (Republican, Wyoming) introduced to Congress the North American Alternative Fuels Act which aims to repeal section 526 of the 2007 Energy Act, allowing the DOD to purchase fuel produced from Canadian oil sands. Since the Obama administration has no concrete plans to clamp down on petroleum production from tar sands¹⁰⁹ this is set to go through. Indeed, if the history of environmental security within the DOD is anything to go on, any policies and laws that actually clamp down on the military’s “carbon footprint” and enforce better environmental stewardship, are destined to be branded ‘threats to military readiness, and thus national security’ as soon as a new danger arises that requires massive military mobilisation. Thus, during the war on terror under the Bush administrations, environmental stewardship laws and regulations inherited from the Clinton administrations were branded a threat to military readiness and consequently national security.¹¹⁰

Conclusion

This article has focused on the fragmented nature of global climate security governance, in order to problematise the securitisation of climate change. The analysis demonstrates that in

the specific case of climate security fragmentation is highly disadvantageous, because it does not equate to an increase in actual security for people. This is not primarily a function of institutional fragmentation, indeed the case of the OSCE and to a lesser extent that of the EU suggest there is no categorical reason why a myriad of security organisations/actors cannot work towards a wider global agenda set by the UN, whose climate security as human security approach promises a safe climate for people. This said, however, institutional fragmentation also facilitates ideational fragmentation. Ideational fragmentation recognises that discourses are tied to institutional identity. Thus this article has shown that in matters of security especially a security actor's (perceived) weaknesses shapes the frames/discourses they will adopt, leaving them to hold often conflicting views on the meaning of climate security and on the best policy action. The emerging gap in priorities together with widely different interpretations of the meaning of climate security is likely to further cement institutional fragmentation, ultimately suggesting that there is little escape from ideational fragmentation and the problems it brings with it.

The question therefore arises: can ideational fragmentation as regards climate security be overcome? Given that ideational fragmentation is facilitated by the definitional lacuna of climate security the first step would have to be the advancement of a universal definition by an authoritative source. The appropriate actor here is the IPCC and it is an auspicious development that the latest report by Working Group II includes a chapter on human security.¹¹¹ The second step would have to be genuine and widespread acceptance of that definition together with the necessary changes to the respective security actor's climate security policy/strategy. The latter is unlikely to happen. From critical/non-traditional security studies we know that security is a matter of perception. In that sense the world's militaries are simply acting in line with their mandate when they –under the label of climate security- concern themselves with the implication for soldiers' health and safety, energy

security and by extension the ability to provide national security. They would not see the reason for changing their strategy¹¹², and indeed it would be unreasonable to expect them to advance a climate security strategy that addresses the root causes of climate insecurity; they are simply not the organisation/actor best suited for this task. This leads me to conclude that ideational fragmentation on this issue will not be overcome and that we as scholars ought to remain sceptical of efforts to securitise climate change and do our best to advise practitioners accordingly.

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Endnotes

¹ See, for example, Barnett, 'Environmental Security'. Trombetta, 'Environmental Security and Climate Change'; Detraz, 'Threats or Vulnerabilities?'

² See various in the special issue of *Global Environmental Politics*, 13(3)

³ O'Neill, *The Environment and international relations*. 7

⁴ Dingwerth and Pattberg, 'Global governance ...'. 191; Biermann et. al. 'The Fragmentation of Global Governance...'. 16

⁵ Ibid. see also Zelli and van Asselt, 'Introduction: The Institutional Fragmentation...'

⁶ It should be noted that this article is written in the spirit of Biermann *et al* influential paper 'The Fragmentation of Global Governance Architectures: A Framework for Analysis' (2009) who have convincingly demonstrated that, in the case of climate change, fragmentation is often conflictive and as such disadvantageous to the cause of reducing GHGs. The authors end their important article with a call for more empirical research on the 'relative advantages and disadvantages of fragmentation'. The present article heeds that call.

⁷ Niang et al., 'Africa...'; Hijioka et al, 'Asia...'

⁸ To be clear this is not a negative verdict on my part; one point of the overall argument advanced in this paper is of course that *not* securitizing climate change could be better than doing so.

⁹ CCDU, *African Climate Change Strategy*.

¹⁰ CCDU, *African Climate Change Strategy*.

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- ¹¹ African Union Department of Peace and Security website
- ¹² Campbell, D. *Writing Security*.
- ¹³ For example, in the ASEAN Declaration on Environmental Sustainability from 2007
- ¹⁴ ASEAN, Foreign Ministers' Meeting Joint Communiqué.
- ¹⁵ ASEAN, Declaration on Environmental Sustainability.
- ¹⁶ ASEAN, 'Action plan on joint response to climate change'. 1 (emphasis added) see also <http://environment.asean.org/asean-working-group-on-climate-change/>
- ¹⁷ ASEAN, 'Three-Year-Work Programme'. 6
- ¹⁸ Barnett, 'Environmental Security'; McDonald, 'Discourses of Climate Security'; Detraz, 'Threats or Vulnerabilities?'
- ¹⁹ Floyd, 'The Environmental Security Debate'.
- ²⁰ Deligiannis, 'The evolution of qualitative environment-conflict research'
- ²¹ Homer-Dixon, *Environment, Scarcity and Violence*.
- ²² Ibid. 9
- ²³ This issue is contentious, so is the use of the term climate refugee. See, for example, Urdal, *Demographic Aspects of Climate Change*. Theisen et al, 'Climate Wars?' Gleditsch, 'Whither the weather?'
- ²⁴ Mass and Carius, 'From Conflict to Cooperation?'
- ²⁵ MacQuarrie and Wolff, 'Understanding Water Security'. 177
- ²⁶ Barnett and Adger, 'Environmental Change, Human Security and Violent Conflict'
- ²⁷ Floyd, *Security and the Environment*. 105, 97
- ²⁸ CNA, *National Security...*, 8
- ²⁹ Ibid.; Briggs, 'Climate security, risk assessment...'; Feakin and Depledge, 'Climate Security...'
- ³⁰ CNA, *National Security...*
- ³¹ Matthew et al. *Global Environmental Change...*
- ³² UNDP, *New Dimensions of Human Security*, 23
- ³³ IPCC, *Working Group 2 Report*, Chapter 12p. 3
- ³⁴ See Herington, 'The concept of security' who differentiates between security as a state of being and security as a set of social and political practices.
- ³⁵ Buzan, et al. *Security...* 'Wæver.' Klimatruslen - en sikkerhedspolitisk analyse'
- ³⁶ Bigo, 'The Möbius Ribbon..'
- ³⁷ Buzan et al. *Security...*
- ³⁸ Trombetta, 'Environmental Security and Climate Change'
- ³⁹ Corry, 'Securitization and "Riskification"'
- ⁴⁰ Buzan, et al. *Security...*
- ⁴¹ Ciută, 'Security and the problem...'
- ⁴² Floyd, *Security and the Environment*, 53; Mason and Zeitoun, 'Questioning environmental security'
- ⁴³ Millennium Ecosystem Assessment, 2003
- ⁴⁴ Floyd, *Security and the Environment*, 184
- ⁴⁵ Mass et al, *Shifting Bases, Shifting Perils*
- ⁴⁶ <http://www.unep.org/disastersandconflicts/>
- ⁴⁷ ENVSEC, 'Projects by implementing organization'
- ⁴⁸ NATO, Environment & Security, 1
- ⁴⁹ Ibid.
- ⁵⁰ NATO, 'NATO helps Ukraine clean-up'
- ⁵¹ NATO, 'Defence and Environments Experts Group'
- ⁵² Ibid.

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- ⁵³ NATO, 'Environmental Security'
- ⁵⁴ Coffey, 'Nato in the Arctic'
- ⁵⁵ ENVSEC, 'Projects by implementing organization'
- ⁵⁶ NATO, 'Environmental Security'
- ⁵⁷ EARDCC, 'Operations'
- ⁵⁸ OSCE, 'Who we are'
- ⁵⁹ Mass et al, *Shifting Bases, Shifting Perils*, 1.
- ⁶⁰ ENVSEC, 'Projects by implementing organization'
- ⁶¹ OSCE, *Madrid Ministerial Declaration*.3.
- ⁶² Snoy and Baltes, 'Environmental Security...'.313.
- ⁶³ OSCE, *Madrid Ministerial Declaration*.1
- ⁶⁴ <http://www.osce.org/stories?activities=121>
- ⁶⁵ Solana, *Climate Change and International Security*.
- ⁶⁶ EU, 'Report on the Implementation...'
- ⁶⁷ EU, 'Towards...'.1
- ⁶⁸ Ibid. 1
- ⁶⁹ Parker and Karlsson, 'Climate Change and the European Union's...'.390
- ⁷⁰ EU, 'Towards...'.2
- ⁷¹ Ibid, 2
- ⁷² EU, 'Council Conclusions...'
- ⁷³ Groen and Niemann, 'The European Union at...'
- ⁷⁴ Ibid, 7
- ⁷⁵ Biermann et al., 'The fragmentation of Global Governance'.23
- ⁷⁶ Wæver, *Concepts of Security*. 49
- ⁷⁷ The White House, 'The President's Climate Action Plan'.4
- ⁷⁸ Obama, 'Remarks Georgetown University'
- ⁷⁹ The White House, 'The President's Climate Action Plan'.4 emphasis added
- ⁸⁰ Ahmed, 'Obama's fracked-up climate...'
- ⁸¹ Werrell and Femia, 'On the record...'
- ⁸² Schwartz and Randall, 'An Abrupt Climate Change...'
- ⁸³ Floyd, *Security and the Environment*.156
- ⁸⁴ I would like to thank one of the three anonymous reviewers for this point.
- ⁸⁵ CNA Corporation, *National Security*....8
- ⁸⁶ Ibid. p.7
- ⁸⁷ CNA Military Advisory Board, *National Security and the Accelerating*.23
- ⁸⁸ DOD, 'Climate Change Adaptation Roadmap'.1
- ⁸⁹ Ibid.
- ⁹⁰ United States Southern Command website
- ⁹¹ DOD, 'Climate Change Adaptation Roadmap'.1
- ⁹² Colman, 'Climate Change biggest threat'
- ⁹³ Alaimo, 'Military taps US expertise'
- ⁹⁴ Briggs, 'Climate security...'
- ⁹⁵ DOD, 'Energy for the warfighter'
- ⁹⁶ Various UN institutions recognize that conflict is an important element of human insecurity, linked to migration, loss of livelihoods, fear and physical danger (see UN, 'A New Global Partnership')
- ⁹⁷ CF various in Sjursen, Helene, ed. *Civilian or military power?: European foreign policy in perspective*. Routledge, 2013.
- ⁹⁸ Dalby, *Environmental Security*. chapter 3, Hartmann, 'Lines in the Shifting Sand.'

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- ⁹⁹ Meierding, 'Climate Change and Conflict'; IPCC. Working Group two. Chapter 12
- ¹⁰⁰ Parker and Karlsson, 'Climate Change and the European Union's...'
- ¹⁰¹ Groen and Niemann, 'The European Union at...'.7
- ¹⁰² For other countries militaries see, for example, the Climate Change & the Military project initiated by the Institute for Environmental Security <http://www.envirosecurity.org/cctm/>
- ¹⁰³ Dalby. *Security and Environmental Change*.159-72
- ¹⁰⁴ DOD, 'Energy for the warfighter'
- ¹⁰⁵ Paskal, 'The Vulnerability of Energy Infrastructure to Environmental Change'
- ¹⁰⁶ DOD, 'Energy for the warfighter'
- ¹⁰⁷ Briggs, 'Climate security...'.1954.
- ¹⁰⁸ Barna, 'Written testimony on Oil Shale'
- ¹⁰⁹ Obama, 'Remarks at Georgetown University'
- ¹¹⁰ Floyd, *Security and the Environment*. 141
- ¹¹¹ Adger et al, 'Human Security'
- ¹¹² As one reviewer for this journal points out however this might change if climate change comes to pose a significant operational risk to the military

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