Climate Change, Social Stress and Violent Conflict
State of the Art and Research Needs
International Conference, KlimaCampus, Hamburg University, 19/20. November 2009

Abstract

Political ecology and climate conflict research

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In this paper I examine the theoretical limitations of climate-conflict research by situating it in relation to earlier debates on environmental security. Climate-conflict research has been influenced by the methodological debates of environmental security. The centrality of such concepts as scarcity and migration in the causal chains of environment-centred conceptions of violence has been resurrected within current climate-conflict research. These limitations are reviewed through a critical comparison of various theoretical approaches that participated in the debate examining the relation of environmental change to violent conflicts: a political ecology framework that posited environmental conflict as a struggle over access/control of natural resources (Peluso and Watts 1996; 2001), ecoviolence models (Homer-Dixon 1994; Baechler 1999) that posit violent conflicts as linked to environment induced "scarcity", and large-N quantitative methods (Gleditsch 1997) that posited resource abundance as integral to generating environmental conflicts. Key issues of methodology and causality, conceptual specificity of environmental conflict and the utility of an ecoviolence paradigm of violent conflict remain relevant to current examinations of the climate-conflict research.

This paper will also suggest that research on climate change and violent conflict can advance by engaging with a broader discourse on climate and society; that investigates the impact of climate on history. This will allow for an evaluation of the formation of the current research programs on climate-conflict and the possible avenues for adding to advance our knowledge on this crucial issue. This will serve to displace a "physics" optic of analyzing how climatic oscillations react on social life, i.e. violence. I suggest that by adopting a political ecology approach we can move this research towards a multi-casual and relational approach focusing on the social dimensions of climatic weather-events and the generation or transformation of violent conflicts. An important reason for adopting a political ecology approach to the study of climate change and its relations to violent conflicts is its taking power, political economy and historical conjunctures as analytical starting points rather than discrete climatic-weather events. This is a starting point that begins with the relation of users and nature and thus conceptually clarifies the substantive meaning of such concepts as scarcity and violence. It is by historicizing climatic phenomena and relating it to specific social systems and societies that we further our understandings of the inter-relationship between climate change and violent conflict.

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Abstract

Scarcity, abundance and conflict: a complex new world?

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Voicing a concern about impending scarcity, the UK government's Chief Scientific Adviser John Beddington warns that "a 'perfect storm' of food shortages, scarce water and insufficient energy resources threatens to unleash public unrest, cross-border conflicts and mass migration as people flee from the worst-affected regions…" (2009).

But scarcity theorists like Homer-Dixon, forecasted an equally bleak scenario almost a decade ago: rapid economic growth would trigger an increase in the demand for renewable resources like cropland, fresh water, and forests, leading to their degradation, depletion, and unequal distribution. In turn, resource scarcity would serve to increase poverty and migration, stretch institutional capacity to its limits, and deepen social cleavages, all of which would increase the likelihood of violent conflict. Even earlier, Robert Kaplan's piece in The Atlantic Monthly warned of "demographic, environmental, and societal stress, in which criminal anarchy emerges as the real strategic danger."

Most political scientists, however, have been altogether more focused on the ills associated with resource windfalls or abundance, not scarcity, and their implication for violent conflict—most of it internal. Oil, diamonds, gold, gems, and timber—precious commodities, all of which should have promoted economic growth and development, lifting standards of living for the masses—led instead to economic deterioration; to unprecedented corruption, mismanagement, and even conflict over their control.

Does abundance then constitute a more significant cause of conflict, or should we be more concerned about a rise in conflict induced by scarcity, being mindful of the warnings by Beddington, Homer-Dixon, and Kaplan? This paper provides a brief survey of academic scholarship on the resource-conflict relationship distinguishes between arguments that focus on abundance versus scarcity as the primary driver of conflict. The mixed findings from this body of research lead the author to question whether the relationship between abundance and scarcity should be examined more closely, focusing instead on how the two may interact: abundance breeding scarcity; scarcity breeding abundance; and how, in a complex new world in which abundance and scarcity coexist, we should craft policies that take these interdependencies into account. From this, five proposals for managing scarce and abundant resources, in an effort to mitigate conflict and promote cooperation are outlined.

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Abstract

Preparing for a warmer world: towards a global governance system to protect climate refugees

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Climate change threatens to cause the largest refugee crisis in human history. Millions of people, largely in Africa and Asia, might be forced to leave their homes to seek refuge in other places or countries over the course of the century. Yet the current institutions, organizations, and funding mechanisms are not sufficiently equipped to deal with this looming crisis. The situation calls for new governance. We thus outline and discuss in this article a blueprint for a global governance architecture on the protection and voluntary resettlement of climate refugees-defined as people who have to leave their habitats because of sudden or gradual alterations in their natural environment related to one of three impacts of climate change: sea-level rise, extreme weather events, and drought and water scarcity. We provide an extensive review of current estimates of likely numbers and probable regions of origin of climate refugees. With a view to existing institutions, we argue against the extension of the definition of refugees under the 1951 Geneva Convention Relating to the Status of Refugees, and against any role of the UN Security Council. Key elements of our proposal are, instead, a new legal instrument specifically tailored for the needs of climate refugees-a Protocol on Recognition, Protection, and Resettlement of Climate Refugees to the United Nations Framework Convention on Climate Change-as well as a separate funding mechanism.

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Abstract

Policy response to climate change in the Middle East and North Africa

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According to the fourth IPCC Assessment Report (IPCC 2007, WG I, WG II) the Middle East and North Africa (MENA) region will be severely affected by the following physical effects of climate change: high temperature increases, significant decline in precipitation and especially the low lying coastal regions with high population density and the Nile Delta will also be severely affected. These changes will directly affect the agricultural production: rising evapotranspiration will contribute in most cases to crop yield declines. Thus, the rapidly declining self-sufficiency in food due to a continued high population growth until 2050 will necessitate a significant increase in food (especially cereal) imports. In several countries that are rich in fossil fuels, the reserves of oil and gas are projected to decline or to be exhausted by 2050. This raises for many MENA countries basic economic challenges: how to pay for the increasing need of virtual water, how to employ, house and feed a rapidly growing population?

These combined challenges posed by climatic, demographic and economic challenges many MENA countries will face until 2050 will affect the human security and survival of its citizens, but also the national security and stability of many countries, and through an increasing push and pull factors the migration pressure from some MENA countries to Europe, the Arab Gulf, North America and Australia may increase what has been considered by many EU countries as an increasing internal security challenge (justice and home affairs) that has become an international security issue. Migration has already been the major driver for European initiatives both in the framework of the Barcelona process (EMP) and of the new Union for the Mediterranean.

There are two alternative policy responses: a) a reactive short-term crisis management trying to cope with the migration streams by FRONTEX, retransfer of migrants in cooperation with countries in North Africa and in the Near East (Turkey); b) a proactive medium- and long-term strategy that addresses the climatic, demographic and economic root causes. While short-term policy responses still prevail in the EU-MENA context, this paper takes up two proactive policy scenarios suggested by the Millennium Ecosystem Assessment: a) a regional adaption fix and b) a global technology garden scenario for coping with both the effects of climate change and desertification by sustainable development initiatives.

Taking up a previous idea of a 'survival pact' within the EU-MENA regions by linking two key commodities of needed food imports (or 'virtual water') by the MENA countries with a need for increasing imports of sustainable energy sources in many EU countries (or 'virtual sun') this paper develops conceptual ideas that were developed further by three collaborative research projects for the German BMU and that were amalgamated in the DESERTEC project that was launched by a consortium of German technology and energy companies and banks in July 2009.

In a thought experiment the final part of this paper will discuss the potential of an interregional EU-MENA survival pact, and as an illustration the DESERTEC project initiative, as one of several tools for addressing the regional climate change impacts in MENA countries that mainstream adaptation and mitigation strategies for coping with climate change impacts of EU countries with regional economic development strategies of MENA countries. What conditions and requirements would have to be met to respond to satisfy Northern climatic concerns with Southern development interests in a way where the North pays for the learning curve with creating an economy of scale for renewables and the South benefits in terms of jobs, income and modernization of the economies and societies based on a gradually evolving mutual trust.

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Abstract

Locating climate insecurity: Where are the vulnerable places in Africa?

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The "securitization" of climate change in the policy world and among academics has largely focused on the causal connections between climate change and conflict. An overlooked dimension of the climate security literature, however, is the connection between vulnerability to natural disasters and mobilization for humanitarian intervention. As the literature on vulnerability and disasters has demonstrated, vulnerability to extreme weather events is only partially a function of environmental and geographic features. In addition to living in areas prone to flooding, drought, or other extreme weather events, communities are often made more vulnerable because they are marginalized from services, infrastructure, and levers of power that might otherwise help them in times of need. They lack adequate public infrastructure (roads, piped water, sanitation, electricity) or access to healthcare, education and other basic services. These risks may be compounded by lack of political representation. In this paper, we seek to locate the confluence of that vulnerability in Africa through the use of Geographic Information Systems (GIS), employing multi-layered maps of sub-national vulnerability to natural disasters. With this mapping project, we aim to produce maps of the relative vulnerability of different places to climate change, first by looking at historic vulnerability, incorporating a variety of indicators. In order to identify areas of vulnerability (and prioritize limited resources), it will not be sufficient to say "Ethiopia is vulnerable" but "this part of Ethiopia is particularly vulnerable for these five reasons." In this paper, we bring together our preliminary findings, incorporating geo-spatial data from a variety of sources including the Global Risk Data Platform (on disasters), the Political Instability Task Force (on killings and violence), the Digital Chart of the World data (on roads and railroads), the World Health Organization's Global Health Atlas on (infant mortality and access to doctors), among other data sources.

This project is the preliminary work under the auspices of the Climate Change and African Political Stability (CCAPS) Project, a five-year research program at the Robert S. Strauss Center for International Security and Law at the University of Texas supported by the U.S. Department of Defence. The project was initiated in June 2009, and this paper represents the first effort at combined GIS-based sub-national climate security maps, using existing data sources. Other members of our team are coding new data: team member Clionadh Raleigh has developed ACLED (the Armed Conflict and Location Event Data), team members Idean Salehyan and Cullen Hendrix are coding data on strikes and riots, and team members Kate Weaver, Timmons Roberts, Michael Tierney, and Bradley Parks will be geocoding climate adaptation projects under the Project-Level Aid Database. This paper makes use of existing geo-coded data sources to provide a preliminary proof of concept.

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Abstract

Climate change and resource use conflict: the case of Northern Kenya drylands

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Frequent droughts and resource use conflict are key features of northern Kenya drylands but little is known about alternative livelihood that would minimize local communities' dependence on livestock. Also there is no documented information on the role that dryland hilltop forests play in both biodiversity conservation and strengthening adaptation to climate change. This paper takes a review of plant gums and resins as possible sources of alternative livelihood in northern Kenya drylands in an era of climate change and violent conflicts over grazing and water resources and highlights the importance of the isolated hilltop forests as water sources and wild food plants repositories. Traditionally, pastoralism constitutes the dominant system of land use, and the mainstay of the economy in northern Kenya. The pastoral production system operates by independent family unit exploiting a common resource (water, grazing land) through privately owned and managed herds. Among the pastoralists, frequent daily movements of herds between pastures help prevent overuse of a single area's biomass and help avoid disease in their livestock. Herd diversification (cattle, camels, sheep, goats, and donkeys) ensures that both browsers and grazers are present and that an extended dry spell or a single disease is less likely to wipe out an entire herd. This is a highly flexible system, which has evolved over time as the most efficient means of exploiting transient water and pasture under ecologically marginal conditions, available technologies, and the prevailing economy. However frequent, prolonged and severe droughts are posing great challenges to survival in northern Kenya. Dams and wells are drying up and cases of loss of life in both human and livestock are becoming more and more frequent. Resource use conflicts are taking place as pastoralist herders migrate to areas where they can access pasture and water. This has resulted in bloody confrontations between various pastoralist communities and among clans of the same community. Conflicts have even crossed borders creating serious diplomatic feuds between Kenya and its neighbours, Somalia, Ethiopia, Sudan and Uganda. Human wildlife conflicts are also common. Gum collectors were interviewed using semi-structured questionnaire.

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Abstract

Climate change and national security: need for divergence

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In the traditional sense, national security has been defined in territorial frame of reference. This frame of reference suited the security discourse in the times when the enemy was on the other side of the border and it was possible to use military strength to fight the enemy. Territorial framework also suited the times since the notions of victory and defeat were clearly demarcated. Moreover, the territorial sense of national security gave rise to nationalism among the citizens inhabiting a certain territory, which aided the state centric security discourse.

Since the end of cold war, a lot of literature that has tried to redefine national security has been published. A lot of it has focussed on national security threats emerging from climate change and environmental challenges to national security. However, on the main this research has focussed on climate change only in an indirect manner, in which its impact on national security is analysed. What this has meant that the cooperative frames of reference necessary for addressing climate change has been sidelined and climate change has been fed into the traditional notion of security. The cooperative notion of security needs to be used with regard to climate change given the trans-boundary nature of threat and given the lack of clear winner and losers in the threat by climate change, unlike the traditional threats to national security.

It was expected by some of the initial research that use of the notion of national security would enable to elevate the sense of urgency required in dealing with the issues of climate change. While this may have happened in most of the cases, it has also proved to be counterproductive given that national security inevitably leads to nationalism and in most of the cases nationalism helps hide the faults within and makes one look for solutions outside the ambit of one's activity.

Therefore, one could see the emergence of the divide on the issue of mitigation and adaptation in the negotiation leading up to Copenhagen round of discussions. National security framework hinders the two levels at which the response to climate change must be prioritised. First being the individual and the second being the regional and multilateral. The role of nation state should be only of facilitating the dialogue between the two levels. In this sense, this paper will discuss the limits of national security framework in responding to climate change in future.

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Abstract

"Climate refugees" as dawning catastrophe? A critique of the dominant quest for numbers

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While the evidence about climate change is increasingly corroborating, the scientific and public interest about the scale and scope of the social changes associated to global warming is constantly rising. This holds especially true for the consequences of climate change for patterns of human flight and migration. However, the concern with "environmental refugees" appears in most parts driven by a quest for ever bigger numbers. Paradigmatic in this regard is the prominent assessment of Oxford-based researcher Norman Myers who predicted the amount of at least 150 million climate induced refugees by 2050. Although this figure can certainly just count as a rough estimate, it is cited by many publications on the social consequences of climate change. In recent years, a number of studies has been added to this literature all together concluding with ambiguous results about the exact figures, but some of them even exaggerating the numbers once more: 50 million by 2010 (UN University), 50 million by 2060 (UNEP), 900 million by 2050 (Christian Aid), just to name a few. Also at the political level, the issue of climate refugees has been put on the Agenda, as for instance by the Solana report.

The apparent ambiguity in numbers points to the fact that most of the existing research on climate refugees is fundamentally flawed when it comes to tracing the exact causal relationships. Although climate change will lead to severe social consequences - flight and migration surely among them - the dominant quest for numbers often blurs the complex web of causal relations and socio-economic conditions on the ground and stretches the predictive capacity of the social sciences beyond its limits. Whether or not climate change leads to flight or migration depends on a multiplicity of different factors, as for instance climate sensitivity and exposition, migration policy and regulations, existing migrant networks and resources that actually enable people to migrate, and political responses regarding adaptation to climate change. Faced with the local conditions of climate change, it seems that there is more to the story of environmental refugees than most of the global models suggest.

Starting from a review of existing research on climate change and forced migration, the proposed paper seeks to answer the question of what social science can plausibly state about the link between climate change and migration and what kinds of predictions - if any at all - are possible. [?] Drawing on two case studies of already existing examples of climate flight and migration - Mali and Tuvalu - [?] it argues for a more profound approach to the issue of environmental refugees and aims at exploring the directions for further research. We argue that research should focus less on ever more sophisticated quantitative models but rather ground analysis in detailed and thorough case studies. These would allow for reconstructing the complex causal mechanisms at work and so put the understanding of a complex phenomenon before its prediction.

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Abstract

Audience; the weak link in the securitization process of the environment?

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We are nowadays experiencing an increasing turn toward the environment and its protection, as well as our own from hazards stemming from its continuous degradation caused mainly by human industrial activity on the planet. During the past years, climate change has climbed up the international security agenda as the central and most important topic related to the environment, one indirectly affecting the entirety of the human race all over the globe. In the securitization process of the environment one can easily witness the institutionally strongest securitizing actors being involved, from internationally known figures and state leaders to numerous local administration representatives, and furthermore, the increasing use of bold language in those actors' attempt to promote environmental issues higher in the security agenda. The unarguably increased intensity and frequency of those actors use of speech acts on local, national or international level demonstrates the intensifying effort to securitize the environment and especially climate change. However, the whole process seems to be slightly off course as the outcomes are not proportional to the increase in the actors' efforts. It seems as if the recipe has a missing ingredient. This article stresses the importance of the audience as the 3rd pillar of the securitization process in general and in the case of the environment in particular. No matter how much effort is put by the most important and responsible actors in the utterance of the fittest and most sensitizing speech acts, it is the audience that will decide to accept the securitization of this issue or not. And in the case of the environment, it rests also in the audience's hands whether the securitized threat will be effectively addressed or not, as it is the public's massive responsive capability rather than national laws, environmental policies and international agreements that can do the difference in the struggle for environmental protection. This paper, promoting the advanced utility of the Copenhagen School of thought in the security discourse, is not just an effort to stress the importance of the audience in the securitization process of the environment, but above all, a call for action and a sensitizing move of every single individual in front of this great challenge of our time.

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Abstract

Climate change, peacekeeping and perspectives for UN reform

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Over the last twenty years a new kind of global threats has appeared, linked to the human impact on the immensely large natural, life-supporting systems of the planet. These threats cannot be linked to any state or group of states: they are part and parcel of economic development and unsustainable lifestyles. They have given rise to a new kind of diplomacy, with specific characteristics, based on the fact that we cannot negotiate with the threatening forces to make them go away.

Since the threats are global, they have to be tackled in a global organization; and the United Nations has increasingly been called upon to manage environmental problems. The general, normative UN Conferences on the global environment in Stockholm 1972, Rio de Janeiro 1992, and Johannesburg 2002, have permitted the nations of the world to measure the importance of the issues and structure response measures. But the impact on national policies has been limited, and it has proven necessary to seek more stringent action through legally binding treaties.

The Framework Convention of Climate Change (FCCC) and its Kyoto Protocol constitutes the most elaborate and ambitious effort to tackle a major survival issue of this kind. The new diplomacy for sustainable development has got a concrete basis for common action to meet the threat of global climate change, based on scientific evidence provided by the Intergovernmental Panel on Climate Change (IPCC). Our paper will give a short history of the FCCC and present perspectives for the future in the light of the forthcoming Conference of Parties in Copenhagen.

Alongside these new developments the traditional threats of conflicts and war, in particular involving nuclear weapons, continue to haunt international security policy. To control nuclear proliferation is a major element in efforts to reduce the risks for conflicts that could threaten the future of mankind. Furthermore, since the end of the Cold War global and regional institutions have had to face a series of internal armed conflicts, leading to new understandings of peacebuilding and state fragility. The United Nations remains a cornerstone in peacekeeping and peacemaking. In the paper we will briefly review the arguments in favour of preventive action and post-conflict peace-building, and the particular role of the United Nations in this context.

The United Nations remains the central institution for international action both on traditional threats and on the new environmental threats, such as climate change. Furthermore, there is increasing concern that climate change in itself will lead to greater instability in the international system. We believe that there is as yet little evidence that it could lead to direct conflict between states. However, such issues as migration, water stress, resource conflicts, particularly involving traditional and new energy sources as all countries strive for low-carbon development, could weaken state authority and increase risks for internal conflicts that could grow into the international arena. We will review some of the recent studies in this regard.

These various elements present new challenges for the UN. The organization must be capable to assist states to manage new types of conflict in an open and constructive manner; in particular the international emphasis on peacebuilding needs to include considerations of environmental stress. In addition, it is imperative also to strengthen the central UN institutions to permit rational management of old and new threats and conflicts at the global level. We believe that the UN will need to be better equipped to tackle these challenges, and that there is at present a strong case for institutional reforms. A blueprint already exists in the 1995 report of the Commission on Global Governance "Our Global Neighbourhood". To promote the reform efforts in the 60th UN General Assembly 2005-2006 practical suggestions were put forward, notably by the High-Level Panel on Threats, Challenges and Changes. We wish to use our own diverse and long experience of UN work on conflict resolution, peacekeeping, preventive action, sustainable development, and climate change to review and develop the Commission's and the Panel's proposals in the light of present developments.

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Abstract

A path dependency approach – on climate change, social stress and violent conflict

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Although the origin of the idea of path dependency can not exactly be dated, the notation goes back on Paul A. David and W. Brian Arthur. In their criticism on efficiency fundaments of neoclassical economics they point out that in a positive feedback process of increasing returns not necessarily the more efficient technology wins. David supports the thesis by research on the evolution of the typewriter and the lock-in of the QWERTY-keyboard. The name of the keyboard consists of the letters printed on the keys of the topmost row of letters on the keyboard. Although this special placing was more a matter of chance than optimal choice and it is long since possible former reasons faded away, it still is dominantly used on present keyboards. "The agents engaged in production and purchase decisions in today's keyboard market are not the prisoners of custom, conspiracy, or state control. But while they are, as we now say, perfectly "free to choose," their behaviour, nevertheless, is held fast in the grip of events long forgotten and shaped by circumstances in which neither they nor their interests figured." (David 1985)

Applied to the Conference topic there are agents who decide how to address climate change, agents who act stressed in a social configuration when affected by climate change and agents who might react in producing violent conflict. In each situation an agent makes a decision and/or 'acts' there are certain circumstances which makes him act the way he does. If path dependency is present, these influencing circumstances need not figure the agent or his special interests. Thus it can cause inefficient decisions compared to present preferences, social stress does not have to reflect agents' interests and violent conflict need not be caused deliberately and goal oriented by present actors. Furthermore path dependent processes have the characteristic of being reinforcing, or even self-reinforcing and resulting in a possible lock-in. Thus if relevant processes concerning climate change, social stress or violent conflict can be described as being path dependent, they have the potential for cascading effects and a lock-in (whatever that might be in the special respect).

Considering the chance of affecting path dependency is especially necessary when considering problem solving or intervening actions. First, the very process in analyzing and problem solving can be path dependent which might result in standard solutions apart from relevant constitutions of the special situation. Second, the problem might be caused by path dependency so it can not be analyzed in rational or linear causality but more a process perspective is needed and the consideration of influencing historical events. Third, if the problem is at least partly caused by path dependency, intervening actions have to regard the non-linearity or stability of path dependent processes and thus to specially include the aspect of path dependency when interfering dynamics.

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Abstract

Climate change in the Persian Gulf – regional security, sustainability strategies and research needs

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In recent years, most countries have integrated climate change and energy security in their national security agendas. Also on an international level, these topics are of key interest, as can be seen in the envisaged new NATO general strategy, the 2007 climate change debate in the UN Security Council and the recent General Assembly resolution asking "the relevant organs of the United Nations (…), to intensify their efforts in considering and addressing climate change, including its possible security implications". Although climate change per se has so far not made it into regional security strategies in the countries of the Persian Gulf, this region is likely to witness strong direct and indirect impacts of climate change, adding additional stress to the already fragile political systems. In my paper, I begin by sketching potential implications of climate change on the Gulf countries and link this to the potentially volatile security dynamics of the region. I will particularly try to answer the question whether the case of Yemen can be regarded as a scenario that other states in the region might face as well. Further, I will look at the external stress the region might face through a major influx of East African environmental refugees and war victims.

Secondly, it should be underlined that the projected impacts of climate change will begin to take effect in several decades. By this time, oil and gas rents for the Gulf States are likely to be on the decline either due to resource depletion or due to a post-fossil fuel world energy. In either case, the Gulf States will require new forms of income generation or the systems will fall short of the necessary means to wield off the considerable inner- and extra-systemic challenges facing the region. I will gauge in how far the current attempts to generate a sustainable future for Gulf regimes might yield success: Is there a realistic chance for a sustainable future economy in the Gulf that will cope with the pressures of climate change without exacerbating existing or future fault-lines? Numerous smaller initiatives for a more sustainable future of the Gulf states have emerged, while individual states have released national "future strategies" (Qatar Vision 2030 or Oman Vision 2020).

However, it remains to be seen how much innovation, behavioural and technological change Gulf governments can actually induce. Finally, I will sketch the research needs from a governance and an environmental/climate science perspective. From the latter point of view, the most challenging science task at hand is the downscaling of the large-scale IPCC predictions to a level that can be of more immediate use to Gulf decision makers. The tension between probability calculations presented as "facts" for policy makers and an augmented level of scientific uncertainty about tangible small-scale regional effects is, however, likely to remain. Research focussing on governance, on the other hand, will need to retain a dual perspective. While analyzing the inner-systemic risks and fault lines in the Gulf states it needs to simultaneously take into account the events related and unrelated to climate change in the neighbouring regions of Asia and North/East Africa. The aim of a comprehensive climate research, however, will always be the attempt to integrate both perspectives. For the Gulf region, research from both angles as well as from a meta-perspective is vital and, so far, surprisingly rare. I will outline and discuss several possible research projects and thus conclude my paper.

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Abstract

Altering regional security dynamics – climate change impacts on Iraq

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The aim of this paper is threefold: Assessing current and potential hot spots in Iraq, where climate change may lead to tensions or violent conflicts; subsequently, identifying the wider regional implications of climate-induced instability in Iraq; and finally contributing to the theoretical debate on climate change and security by applying Regional Security Complex Theory (RSCT) as originally developed by Ole Wæver and Barry Buzan.

Today already, water shortages repeatedly cause domestic conflicts between tribes and regions within Iraq and lead to tensions with neighbouring countries. Additionally, three wars within the last three decades, mismanagement, pollution and intentional environmental destruction heavily degraded Iraq's environment. Scientific projections imply that climate change will worsen environmental conditions in Iraq and threaten peoples' livelihoods. Current studies discussing potential security implications of climate change allude to the fact that it may exacerbate already existing tensions and scarcities and act as a "threat multiplier". The cascading effects of climate change may even provide tipping points for non-violent contentions to turn into violent conflicts. With water availability likely to decrease further, Iraq being a downstream country and no water sharing agreements in existence for the region, tensions could be severely aggregated.

The paper chooses the following approach: (1) Developing an analytical perspective, drawing particularly on the conflict constellation approach of the German Advisory Council on Global Change (WBGU) and the review of the implications of climate change for armed conflict by Halvard Buhaug et al. (2) Applying the analytical perspective to identify impacts of climate change on Iraq. (3) Assessing how impacts of climate change and potential hot spot areas could affect domestic security and regional relations by using RSCT. This theoretical framework allows a broader incorporation of the transnationally intertwined political, socio-economic and ethno-religious conditions in Iraq and the region. A particular focus will be to explain how local and regional level may interact. The recently developed concept of "Regional Environment Security Complex" by Guen Lee and its potential added value will be discussed as well.

The paper will thus address two gaps in the current climate change and security literature: First, it will address a region which so far has not been reviewed in depth despite a well-developed body of studies. Indeed, many studies focusing on the 'Middle East' actually address North Africa or the Levant countries. Second, while climate change is a transboundary issue, many studies and papers take either a global or continental perspective or have a focus on single countries and sub-national regions. The middle ground has been so far only limitedly theoretically addressed.

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Abstract

Climate change and its impact on the Palestinian-Israeli water conflict

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Climate Change (CC) is a global phenomenon. Yet, its consequences differ largely from region to region. This paper will try to lay out cautiously some of the CC implications for the Middle East and here especially, Israel and the occupied Palestinian territories. Some of the expected impacts will be presented concerning climatic features themselves, the direct consequences on the socio-political sphere, and here especially questions related to water availability, but also on the larger political sphere, i.e. the water conflict between Palestinians and Israeli.

Despite being a very real matter, already some myths about Climate Change are forming here and concerning all three spheres. They will have to be critically analyzed. A new discourse is forming already that introduces a new risk, allegedly new challenges and new forms of securitization and framing the existing water conflict.

The paper will thus have to introduce the existing dynamics and interests of the water conflict at work and weigh it against the additional threats under CC scenarios.

- How deep will be the expected impact of CC in the highly disputed water resources and their availability?

- Which are the chief effects on humans and how far-reaching shall they be considered to become?

- Can Adaptation and Mitigation (A&M) be discussed as such and without taking into consideration the actual balance of power, deprivation and existing consequences of the water conflict? Und which circumstances can A&M efforts be expected to bear fruits?

Finally, the responsibility of the international community will be critically investigated and highlighted.

Climate Change, Social Stress and Violent Conflict
State of the Art and Research Needs
International Conference, KlimaCampus, Hamburg University, 19/20. November 2009

Abstract

A psychological perspective to climate stress in coastal India

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India has been identified as one amongst 27 countries which are most vulnerable to the impacts of global warming related accelerated sea level rise (UNEP, 1989). In view of the perceived potential threat to coastal India and more specifically to coastal metropolitan cities of India owing to the vast sea-side development and huge populations in the vicinity of the coast, it becomes further important that people of these cities should be thoroughly studied from a psychological perspective too besides the technical studies of potential physical impacts of changing climate.

This study is aimed at developing a conceptual framework for behavioural analysis of people of Indian coastal metropolitan cities regarding climate change and how they have behaviourally adapted to whatever climate changes they believe have occurred or are likely to occur. Current concern over global climate change stems, in part, from the predominant evidence that its causes are anthropogenic: the result of human behaviour. However, it is less widely recognized that the solutions are also rooted in human behaviour. The study is in line with article 6 of New Delhi Work Programme of UNFCC (2007) in which special effort to foster psychological/behavioural change has been stressed through public awareness.

Indian coastal metropolitan cities like Mumbai and Chennai have been chosen as the study sites for this purpose since both of these cities are listed under vulnerable categories for sea level rise (TERI, 1996). Psychological assessment of human-climate interface, behavioural adaptation and subjective well being of people residing in Indian coastal metropolitan cities are therefore crucial topics of concern.
The central idea behind the proposed research work is to address psychological dimensions like what motivates people to have pro-environmental behaviours, what restricts their actions, what are the things that people find stressful relating to climate change, what are the cognitive-affective-conative dimensions of human climate interface, how have people reacted to climate change in the past and adapted to newly occurred changes, what is the level of preparedness of people to meet future challenges associated with climate change, what coping strategies people opt in crisis situations, etc. The coastal zones of India are highly vulnerable to the expected rise in sea levels due to climate change. Besides studying the behavioural aspects, an attempt would be made to educate the public and create awareness among the masses on climate change issues together with suggesting the possible behavioural coping strategies and intervention plan to combat the adversities of climate change.

Finally, this study is expected to not only bring out the different kinds of risk perceptions of climate change but also intends to address both overt and covert behavioural aspects such as readiness to act, to take initiatives, to learn new ways, to change lifestyles, to adjust and to negotiate solutions so that crisis situations can be better handled. It will require the depth of involvement towards the issue and the sense of social responsibility on the part of people focusing on psychosocial approach towards climate stress and related issues in coastal India.

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Abstract

Enhancing resilience and security of low income communities to climate change in growing cities: an assessment of flood management and planning regimes in Kampala City, Uganda

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The rapid expansion of settlements in cities and worsening economic inequality has shifted the balance of disaster risk from rural to urban areas. People have to survive in a money economy and have to contend everyday with many socio-economic and environmental hazards. Studies about flood hazard risks in Kampala are inconclusive and in the absence of reliable information, it becomes very difficult to evaluate the different impacts of integrated flood management and planning regimes on the livelihoods of low income households. This paper arises out of an ongoing study in the city of Kampala to spatially determine the magnitude and intensity of exposure to flood hazards and how these impact on the livelihoods of communities that occupy low income areas. It also assesses the influence of flood management and planning regimes I enhancing the resilience and security of these low income settlements. Here the actions of various stakeholders and their levels of participation in flood hazard reduction and governance systems are emphasized and the networks that exist amongst these actors explored further. Six low income settlements; Kisenyi, Kivulu, Bwaise, Katwe, Kinawataka and Katanga, were selected for further detailed study. Results indicate that people living in low income areas are exposed to multiple vulnerability stresses coming from a combination of heavy rainfall, severe marginalization together with poor planning systems especially housing, infrastructure and drainage management. Infrastructure systems have reached their full capacity and together with poor maintenance, inadequate income, few assets, inadequate shelters, absence of early warning systems and total absence of safety nets small downpours and low intensity rainfall events have large knock on effects and massive disruption of the lives of the poor and subsequently the whole urban economy. As local communities are not flexible enough to cope with frequent "closures" of their livelihoods, city authorities should not wait for the next disaster to happen. This paper argues that a better understanding of the urban system is needed to improve the design and implementation of urban housing projects. There is a need to recognize the multiple deprivations that contribute to increasing exposure of low income communities to stressful urban environments and integrate these into the general city development strategies.

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Abstract

The SPEED project, climate change and societal stability

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This presentation will introduce conference participants to an on-going project, the Social Political and Economic Event Database Project (SPEED) and discuss its implications for the study of climate change and instability. The project uses advanced information technologies to extract targeted information from a global archive of 35 million news reports from such diverse sources as the New York Times, the Foreign Broadcast Information Service, the Summary of World Broadcasts, and the Cline Center News Website Crawling Service. The latter service began in the beginning of 2006 and pulls news reports from over 5,000 news feeds several times each day. The news reports in the archive begin on January 1, 1946 and are updated daily.

The presentation will focus on the Societal Stability Protocol, which extract information on such things as political expression events (demonstration, speeches, symbolic acts, etc.), politically motivated attacks, destabilizing state acts, political power reconfigurations, mass movements of people and cataclysmic events. The event data extracted is temporally and spatially referenced (to the city level, where applicable). It also collects an encompassing array of data on initiators, targets, victims, intensity measures, event origins, attributed motivations, etc. It is readily importable into GIS programs and can be displayed in a variety of formats.

The Societal Stability Protocol has been generating "production data" for several months. Moreover, beginning in September a research strategy will be deployed to examine the distribution of instability indicators with respect to a number of episodes of large-scale, weather-related disasters (droughts, heat waves, storms, etc.). Some preliminary data will be available for the conference, though the primary thrust of the presentation will be on the future utility of the SPEED project.

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Abstract

Climate change, resource competition and conflict amongst pastoral communities of Kenya

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Increasing global temperatures has caused havoc in many part of the world and especially in developing countries. The Northern region of Kenya has been worse hit by the continuous climate change with no rainfall or drastic rainfall if any for a prolonged period of time. There has been an increase on the rate of dryness and heat that has led to mass migration of the pastoral communities in search of fodder and water for their animals. Traditionally, pastoral communities move from one place to another in search of water and pasture however climate change and environmental degradation have exacerbated this situation leading to resource competition. The most empirical consequence of climate change among the pastoral communities is mass migration that has caused three underlying movements namely; movement from one pastoral community to another, movement from a pastoral community to a farming community and movement from a pastoral community to a neighbouring country. The prospective effect of this mass migration is inter-ethnic conflict, intra-ethnic conflict and international conflict. This movement puts pressure on the little available resources that have to be shared by two or more communities. As a result of this movement there have been frequent violent conflicts which in many cases result to death, cattle rustling, social stress, disruptions of social settings and most importantly economic set back in reaction to resource scarcity. Based on this background the question that needs to be addressed in this paper is the role played by climate change in mass migration and conflict among the pastoral communities in Kenya. Predominantly this paper seeks to address the extent to which continuous climate change has led to violent conflict.

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Abstract

Towards a biopoliticization of security? The relevance of a Foucaultian framework for studying the "securitization" of climate change

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Climate change is increasingly being articulated as the most important security issue by scientists, politicians and the media. To what extent is the policy field of climate change being transformed as a result of security discourses? Is the introduction of climate change as a security issue transforming traditional security institutions like the UN Security Council? In this paper, I develop a theoretical framework based on Michel Foucault for studying the changes in governmental rationalities and technologies that result from the articulation of climate change as a security issue. The first part of the paper introduces the Foucaultian framework and discusses its merits by comparing it to alternative theoretical concepts. The Copenhagen School's Securitization Theory is a useful tool for investigating one particular case of articulating climate change as a security issue. The Copenhagen School studies elite speech acts that articulate climate change as an existential threat in order to legitimise extraordinary procedures or measures. As up to now, there is no evidence of exceptional measures in the field of climate change (only a lot of security talk), a different theoretical approach is needed. The Foucaultian concept of governmentality distinguishes between various discourses of security, each of which is related to a different set of rationalities and technologies of government. Foucault has emphasized the relevance of geopolitical and biopolitical security discourses and directed attention to the way in which the two discourses co-exist. This means that security today is not (only) about securing national identity and territory (geopolitics), but also about securing the biological life of the population (biopolitics). The biopolitics of security is a form of risk management that secures life by securing circulation, i.e. by securing life's freedom to engage in transactions that are required for its reproduction and for its fructification. As a result of advances in molecular biology and the digitalisation of information, the "life" that is to be secured by biopolitics has changed. Life is now conceptualised as a continually emergent self-organising system, whose capacity to adapt to contingencies is the key to its survival, as Michael Dillon has demonstrated. Where a particular form of life is conceptualised as a threat to the continuation of circulation and therefore to life's survival, the sovereign right to kill may be legitimised in a regime of biopolitics, as Michel Foucault has argued in his lecture on state racism. The major strength of the Foucaultian concept is that it provides a broader framework for analysing the implications of different security discourses.

The second part of the paper illustrates the relevance of the Foucaultian framework for the analysis of climate change as a security issue by advancing a number of hypotheses. The Paris School of securitization which draws heavily on Foucault has demonstrated that a biopoliticization of traditional institutions of security can be observed, for example in the field of HIV/AIDS or in the field of migration. The Foucaultian framework allows the researcher to ask: Is the articulation of climate change as a security issue product and driver of a biopoliticization of security? For the field of climate policy, I advance the hypothesis that the introduction of security discourses is linked to a shift in policy emphasis from mitigation to adaptation. The biopolitics of security that drive the politics of climate change are about forging adaptive, emergent life that is fit for the increase in contingency that the impacts of climate change are assumed to produce. The focus of international climate policy is not on preventing or pre-empting risks but on developing institutions that foster resilience and adaptation to the contingent impacts of climate change. The commodification of climate-related risks in the form of speculative financial products and the trading of these in global financial markets is a prime example for biopolitical securitization in the field of international climate politics. For the field of security policy, I propose the hypothesis that climate change as a security issue is speeding up the already ongoing but still highly contested biopoliticization of international security institutions like the UN Security Council and the G8. I suggest that military capacities are more and more put into the service of securing circulation and are transformed by the demand to thrive on contingencies. I advance the hypothesis that in the UN Security Council, the biopoliticization of security is fostered by industrialised countries. Developing countries fear that the weakening of geopolitical security discourses will open the door for biopolitical interventions in national affairs by the industrialised countries.

I conclude that a theoretical framework that features the biopolitics of security is essential in order to make sense of the transformations in governmental rationalities and practices that can be observed as a result of the articulation of climate change as a security issue.

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Abstract

Climate change, vulnerability and disasters: Implications for human security in the Niger Delta, Nigeria

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Climate change, conflicts, and the squeeze on natural resources due to population growth and environmental degradation are intensifying the poverty and vulnerability of many people especially in the developing countries. The diversity of these challenges and of how individuals, households, businesses, governments, and civil society deals with them are best understood through analysis of their local dimensions. Niger Delta has emerged as one of the most ecologically sensitive region in Nigeria. With an estimated population of about 140 million in 2007, resources (oil and gas) from Niger Delta are the main source of revenue for the Nigerian state, accounting for about 97% of the country's total export. The region is highly susceptible to adverse environmental changes occasioned by climate change because of its coastal location. The already deplorable state of the environment as occasioned by oil production and environmental degradation, coupled with other innumerable social and environmental problems imply that the rise in sea level and associated biophysical and socio-economic impacts will be much. One prediction is that Nigeria would lose close to US$19 billion as a result of catastrophe in the next ten years, while, at least, 80% of the inhabitants of the oil-rich Niger Delta would be displaced. This prediction when juxtaposed with the current vulnerability and increasing incidents of disasters has a lot of implications for human security. The people of the region are highly dependent on their environment for their source of livelihood. The economic activities of the people have been largely distorted as a result of the environmental degradation caused by climate change and exploration and exploitation activities of multinational oil companies. The increasing scarcity of land has accelerated the stress on available resources and this has engendered varying conflicts that have become incessant in recent years and is predicted to increase in the nearest future. This study, derived from empirical survey, examines the linkages between climate change, existing vulnerability situation and disasters incidents and the implications for human security in the Region. Two surveys were carried out. The first was a local levels survey that examined the vulnerability situation in selected communities while the second focused on disasters and emergency preparedness of relevant institutions, community, government and non-government organisations. Given the existing high level of poverty in the Region and in Nigeria, any significant disruption in oil exports due to conflicts triggered by increasing environmental degradation, disasters and related climate change impacts will further worsen the existing volatile situation in the Region and serve as a threat to human security in the country.

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Abstract

"Protected" areas as potential violent conflicts theatre

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Protected areas constitute from experts approach one of the most successful strategies for biodiversity conservation in the world. The extension of protected areas at global scale is considered in 19.6 millions represented in 117.905 places under different categories imposing occupation and land use restrictions (World Database on Protected Areas 2006). These areas and its targets, have also considered as strategic spaces for development of nations, a matter of national security and a clear answer for mitigation and adaptation to potential climatic change effects. 168 signatory countries of the Convention on Biological Diversity have assumed the commitment of emitting politicians focused to biodiversity conservation and among other things, declare and guarantee protected areas management.

However, biophysical and social characteristics of many protected areas in the world can offer an ideal theatre to actor's interests participating in violent conflicts as a strategic geopolitical position. Beyond an explicit interest for the control and exclusive access to valuable natural resources as water or forests, protected areas are important from war point view because they constitute optimal refuge conditions in the mark of disputes for territorial domain. In this sense, protected areas and their social agents are involved in strong situations of change and risk. What happens with protected areas and conservation agents (both local people and institutional agents) in countries or regions with violent conflicts? How social agents adapt its intervention strategies when protected areas are scenarios of war?

Through Colombian case study, this paper presents first, a contextual framework of National Parks System and the main incidence points of armed conflict in conservation strategies; secondly, an analysis approach to understand direct armed conflict impacts on protected areas management and the kind of institutional adaptations to accomplish conservation goals in such situation. Finally, two preliminary questions to discussion: which monitoring strategies we have to know the effects of climatic change in relation with potential violent conflicts in protected areas? How protected areas can contribute effectively to prevention or resolution of violent conflicts in the context of the climatic change?

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Abstract

Climate-induced migration as a security risk and a threat for conflict in Mexico

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The paper explores the complexity of climate change-induced desertification, land degradation and drought (DLDD) together with worsening socio-economic conditions as a driver for environmental forced migration (EFM) in relation to human, gender and environmental (HUGE) security. These triggers get worsen due to the US immigration policy, where fans, drones, Border Patrol and infrared surveillance systems have forced migrants to cross the dangerous desert of Arizona or to ally with human traffickers related to transnational organized crime. Prostitution, public insecurity, crime, arms, HIV-AIDS, money laundering and drugs impact in both countries, but armed violence is affecting Mexico more due to its weak legal system, poverty, corruption and the penetration of the police and military by criminals. This insecurity has forced both countries to jointly combat this social cancer in the framework of the Merida agreement.

Methods: A combined approach of demographic studies, deep interviews, participative observation, life histories, police data, political and intelligence cooperation between USA and Mexico, newspaper reports, focus groups and free association are the techniques for analyzing EFM, the coping mechanisms developed to mitigate the threats and the impact on the destruction of social networks and the increase of social vulnerability, together with the emerging violence among competing crime gangs that have created a war of low intensity with loss of governance along the Mexican border (in 2008 1,600 executions occurred only in the small border city of Juárez and more than 8,000 in Mexico during the first two and half years of the government of Calderón).

Results: The impacts of DLDD combined with socio-economic factors (rising costs of agricultural inputs, declining prices for food crops, price hikes of the basic food basket) and political neglect (uncontrolled import of subsidized maize without customs) forced poor families in rural areas to migrate to the USA or to plant illegal crops. The demand for cheap labour, drugs and pornography in the USA are drivers of this illegal migration. The complex linkage among physical, socio-economic and political factors has increased the unauthorized migration to the USA and forced migrants to ally with transnational criminal gangs. Thus, 'environmental-forced' migration is a complex, multi-causal and interactive phenomenon with often negative outcomes that can destroy the HUGE security of families and communities, and increase the social vulnerability of women, who must work in the fields, care for their children and maintain the extended family, while they expect the remittances. If these developments are triggered by poverty, public insecurity, low legal reinforcement and crime entire villages must flee from physical violence. Thus, it is impossible to distinguish clearly between EFM and socio-economic migration, but both have created xenophobia against Latinos in the USA.

Conclusions: Environmental 'forced' migration is a complex, multi-causal and interactive process, with non-linear outcomes that can affect lives, families, communities and countries, as the Mexican case illustrates, and increases social vulnerability of women. Growing US prosecution of migrants and the infiltration of crime into the Mexican government increased the insecurity and transformed the northern border into a war of low intensity. Cooperation against organized crime has forced both governments to share intelligence, combat the illegal arms and drugs trade and coordinate their policy against these powerful gangs. But adaptation to CC and development activities would improve the livelihoods and environmental services in affected areas creating jobs for young people. A strong social and environmental development policy in Mexico would better counter this criminal behaviour and prevent EFM, drug dependence and family disintegration. It would open a potential for a peaceful living together of both countries

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Abstract

Security as a weapon: how cataclysm-discourses frame international climate negotiations

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This paper argues that while scientific facts about the security implications of human climate change are far from reliable, the perception of climate change as a security threat today already affects international climate politics considerably. Yet, opposing the assumptions of the securitization account, the paper argues that this will not lead to the adoption of exceptional measures in international climate politics. Rather the climate/security narrative serves as an argumentative strategy of different actors in international climate governance to disclaim responsibility, lay the blame on other actors or build coalitions for their own goals.

The discursive hegemony of the climate/security narrative results from its establishment as an empty signifier. The conceptual openness of security – enforced by the emergence of broader security concepts like human security that include economic and social factors – enabled as diverse actors as security officials and developmental NGOs to refer to it at the same time. Yet, the decisive feature of every security story-line – regardless whether drawing on soft or hard concepts of security – is that it includes some form of offering. Every utterance of security is drawing a boundary between an inside or friend (the victims) and an outside or enemy. The exclusion of an outside thereby guarantees coherence along the elements of the inside. This makes playing out the security card a strong argumentative strategy to build coalitions or to accuse other actors.

Drawing on the method of an argumentative discourse analysis the paper firstly identifies different strands of a climate/security narrative in science. Secondly it is asked which actors of international climate politics adopt these story-lines and which policies they promote in the post-Kyoto negotiation process. Thirdly the success of the strategy for policy-outcomes is interpreted against the background of the applied narratives. It will be argued that the result of the post-Kyoto negotiations in Copenhagen in December 2009 will heavily depend on which version of the climate/security narrative will succeed to be accepted publically.

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Abstract

Studying the relationship between climate variability and human security in the Horn of Africa

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The impacts of climate change on society will be experienced both through changes in mean conditions over long time periods and through increases in extreme events. In drylands, changes in climate, along with anthropogenic pressures, impact vegetation productivity and related ecosystem services on which human security relies. However, uncertainties remain on how changes in ecosystem productivity influence human security. Most studies analyzing the relationship between human security and climate are at the country level, ignoring fine-grained spatial heterogeneity in local climatic and socio-economic conditions. Here, we used detailed spatio-temporal information extracted from wide-swath satellite data (MODIS) to examine the impact of ecosystem changes on malnutrition and armed conflict in the Horn of Africa. The analysis was performed at a subnational and village scales. It estimated the influence of ecosystem productivity and variability, land degradation, economic activity and accessibility on the occurrence of conflict and malnutrition. Results suggested that, in the Horn of Africa, increased levels of malnutrition were related to armed conflicts. At the regional level, ecosystem variability was associated with malnutrition. This relationship was not statistically significant at the village level. At both levels of analysis, our results indicated that armed conflicts were more likely in regions with more vegetation. They also showed the importance, in low-income countries, of local economic activity and accessibility to reduce the likelihood of malnutrition and insecurity.

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Abstract

Assessing the security implications of climate change: Country case studies of Bangladesh

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There is an increasing realization that climate change is no longer merely an environmental problem. In recent years, it has become viewed as a core development challenge that carries potentially serious implications for international peace and security. Climate change induced mass migration is foresight to have implications on international security, on human right violation or even as development challenge, but how the micro level actors' like individual(s) and group(s) interactions lead to violent mass conflicts is not analysed yet through empirical research. In other words, the questions need to answer, why a climate refugee is a threat to peace and security? And how they are exacerbating potential political security?

Since climate change will redraw the coastlines, submerge the places where million of people grow foods, devastate available water reservoirs, expose to more occasional and fiercer storms or more severe droughts and likely force large numbers of people to move from their homelands. Climate change will undermine livelihoods of many countries, particularly the most vulnerable developing countries. It is clear that climate change holds the potential to exacerbate scare resource pool. As a consequence or strategy of adaptation many would like to start migration, according to many "with a potential to start processes like mass migration that in turn may affect the security of neighbouring regions and countries".

This paper attempts to tease out the rhetoric with clear analysis of where the areas of concern lie from a micro level analysis, and hopes to add nuance, texture and detail to the debate on the security implications of climate change. The case study will consider the migrated individual(s) and group(s) as the target group to interview from the slum areas of Dhaka city, capital of Bangladesh one of the most vulnerable country to climate change. The aim of the attitude survey is to see the role of migrated individual and group interactions leading to or resulting from violent conflicts, and their links with social network or social protection that encourage some groups to be violent, while discouraging others. In doing so, the paper will also see security threat related human migration from historical background and look forward for future potential in the era of climate change.

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Abstract

Exploring the relationship between climate awareness and adaptation efficacy for anticipatory adaptation against the impacts of sea level rise on livelihood security in coastal Bangladesh

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Dealing with livelihood security in the face of future climate change requires concerted efforts from various actors including the local people. How local people might respond depends along with others on their climate adaptation efficacy. Adaptation efficacy is individual's perceived ability to initiate adaptive response. Various factors influences climate adaptation efficacy including climate awareness. Climate awareness is manifested through familiarity with, perception of, and knowledge about climatic events. This paper identifies and assesses quantitatively the influences of various factors of particularly the three dimensions of climate awareness on adaptation efficacy of coastal people to secure their livelihood in coastal Bangladesh. A total of 285 respondents are randomly interviewed. '*Familiarity with*', '*perception of*' and '*intuitive knowledge about*' climate change-sea level rise (CC-SLR) have been used as indicators of *climate awareness*. Employing principal component analysis (PCA) a total of 20 factors fall under 8 components (*Eigenvalues* >1) are identified which explain 72% of the variance. Using iterative backward method in multiple regression models the explanatory powers of these twenty factors and three dimensions of climate awareness on adaptation efficacy are predicted. Model as a whole is significant ($F(22, 262) = 27.61$, $p \leq 0.001$, $R^2 = 0.45$ ($R^2_{adj} = 0.43$)). From the comparison of standardized coefficient (beta: β) it is evident that among all factors that affect climate adaptation efficacy positively, perception about CC-SLR event is the strongest one ($\beta = 0.51$, $p < 0.001$), followed by age ($\beta = 0.33$, $p < 0.001$) and distance from the coast ($\beta = 0.10$, $p < 0.05$). On the other end, among the factors that affect adaptation efficacy negatively, habit of seeking external assistance such as contacting with local authority to solve problem is the strongest one ($\beta = -0.17$, $p < 0.001$), followed by frequent adaptation against dryer condition ($\beta = 0.16$, $p < 0.001$) and salinity intrusion ($\beta = 0.10$, $p < 0.05$). These factors tandem with climate awareness guide the adaptation efficacy of people. The finding is substantive for policy makers and planners in designing climate awareness raising programmes to enhance climate adaptation efficacy of people to adapt with livelihood insecurity in the coastal Bangladesh given the impact of CC-SLR.

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Abstract

Climate change, conflict and fragility: policies for development, adaption and peacebuilding

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A recent think-tank report asserts that 'Climate change is set to transform the security environment'. It further argues that 'state failure and sometimes collapse will be a highly visible feature of the international security landscape,' and sets alongside this the role of massive global poverty and inequality in fuelling violent conflict. These linked concerns direct our attention towards vulnerability, its role in conflict, and the discourse on state fragility. Violent conflict and state fragility can each be a cause and a result of the other; the balance of which causes what varies from case to case. Both are shaped by poverty and inequality and are themselves parts of what shapes that broader development context. The consequences of climate change add further active ingredients to this already potent brew.

The physical effects of climate change vary from region to region. In most places, they combine to make the human habitat less habitable - marginally in some places, significantly in others to the point of non-viability. These impacts of climate change will play upon and exacerbate the vulnerability of ordinary people to extreme disruption, weakening confidence in the social order and its institutions, and damaging their resource base. In these circumstances, urgent grievances and sharpening conflict can be expected. The risk is greater and the conflicts will be more intense if particular ethnic, caste, religious or regional groups lose out in resource disputes and others do relatively better.

Both the increasingly frequent and intense impact of climate related stresses and the associated increase in conflict risk place rising demands on state capacity to protect citizens. The state needs to organise itself to adapt to the pressure of climate change and to manage conflicts so they can be resolved peacefully. Where state institutions have limited capacity, these tasks are likely to be too much, ordinary people will be left unprotected, and the potential grows for grievance to fuel the escalation of conflict. This could itself absorb the energy of the state in such a way that it has even less capacity available to adapt to climate change. Thus, in situations of state fragility, climate change both demands more of limited state capacity and threatens to diminish it.

To unravel these strands and identify entry points for policy requires further analysis of the nature of the causal processes underling conflict escalation and state fragility in the climate change context. This paper aims to set out the problem of the interaction between climate change, state fragility and conflict, in a way that offers guidelines for how to address it.

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Abstract

Routine violence in the Javanese districts: neo-Malthusian and social justice perspectives

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This paper examines the role of population pressure and vertical inequality, and their possible joint effects on routine violence across Javanese districts. It looks at violence from the perspectives of neo-Malthusian and social justice. These issues are highly relevant for Java. Inhabited by 128 million people, it is the most populous island on earth and the most densely populated island in Indonesia, making it classically Malthusian. The effects of global climate change (e.g. rising sea level) and environmental degradations are likely to deepen the Malthusian scenario for Java. Unlike the country as a whole, the island is ethnically very homogenous. We employ count data panel data regression technique of 98 Javanese districts during 1994-2003.

Using population density as the indicator of population pressure, we empirical evidence of the neo-Malthusian conflict scenario. Although the role of vertical inequality in conflict has been largely discounted in cross-country study, we find a U-shaped relationship between routine violence. It means that violence will decline as inequality rises from a low level; however, as inequality keeps rising, violence will reach a turning point at a lowest point, where violence starts to increase as inequality continues to rise. Our results point to a tolerable level of vertical inequality at the value of income, the Gini coefficient is at 0.34. It indicates that there is some optimal distribution that minimises conflict. Either an increase or a decrease from this middle range of inequality is likely to disturb the social peace, and this is what Hirschman (1973) refers to "tolerance for inequality". Lower levels of inequality might reflect stagnant hopes. But people, observing the incomes of others rising at a faster rate than their own, interpret this as a signal of social mobility. They patiently wait for their turn of better fortunes. However, at higher degrees of inequality this effect is likely to break down, as many people find their expectations unfulfilled and lose hope of catching up with the beneficiaries of a higher a higher Gini coefficient.

On the upswing part of the U-curve between inequality and violence, the violence inducing risk of higher inequality is aggravated if it coincides with higher population density or larger size of youth bulges. The logics are in order. Inequality induced grievances would be more intense and spread quicker in more densely populated localities, Rwanda is another telling example in this respect. Since youths are the main perpetrators of any kinds of social violence, or in other words youth is an important agent of violence, higher levels of inequality potentially add to youth frustration. In sum, these findings point to an unsafe mixture of population pressure and inequality.

Climate Change, Social Stress and Violent Conflict
State of the Art and Research Needs
International Conference, KlimaCampus, Hamburg University, 19/20. November 2009

Abstract

Environmental shocks and civil conflict

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The economies of agrarian societies are tightly linked to environmental conditions and events. Using annualized rainfall data as an instrument for economic performance, a recent study of Sub-Saharan Africa found strong evidence linking economic shocks (i.e. droughts) with increased risk of civil war. But what are the causal mechanisms that connect economic shocks with conflict? This applies employs a spatially disaggregated approach, with new geo-referenced precipitation and conflict data, which permits a more appropriate and targeted empirical assessment of alternative explanations. By analyzing the effect of rainfall deviation on conflict through economic growth at various levels, we seek to assess whether any systematic co-variance is driven primarily by local effects on motivation/rebel recruitment or by national impacts on state capacity. This paper thus speaks to both the general literature on economic causes of civil conflict and the ongoing debate on implications of climate change for human security and peace.

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Abstract

Climate Change in the environmental conflict debate

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Discourses about environmental conflict are largely the result of the framing and the transformation of the linkage between global environmental change and security. While the first attempts to link environmental change with security were made by peace movements and critical scholars in the attempt to promote a non confrontational approach to security and different sets of security practices, subsequent research tended to assume the existence of a causal link between environmental degradation and violent conflict (Homer-Dixon, 1991, 1994).

This framing is the result of the application of the dominant discourse about what counts as security within International Relations, or as Walt puts it, "the "study of the threat, use, and control of military force" (1991, 212). This perspective has contributed to an emphasis on violence and to a division in the focus of research between violent conflict and resource management. It has also led to a marginalization of climate change and to a focus on developing countries.

The first part of the paper provides a genealogy of the environmental conflict discourse and emphasises the place that climate change had in it. It shows how the initial interest for conflict induced by climate change was replaced by a focus on resource scarcity and outlines the drivers of the renewed interest for the implications of climate change.

Drawing on this analysis and adopting the theory of securitization (Buzan, Wæver, & Wilde, 1998; Wæver, 1995) but challenging it with a more contextualized approach, the second part of the paper considers the impact that the environmental conflict discourse had on the transformation of security practices, which shifted from an approach based on dealing with emergency toward a more proactive and preventive one that focuses on resilience.

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Abstract

Disaster prevention as a tool of sustainable peace-building – suitable concept or Western paternalism?

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Climate change is responsible for approximately two-thirds of all natural disasters. However, natural disasters are not solely the result of natural events. Rather, vulnerability to their potentially negative outcomes – human, material, economic, and ecological losses – is strongly determined by 'upstream' social and political processes that have led to increased exposure and less adaptive capacity of individual and community units in the first place. At the same time natural disasters themselves have an impact on social and political dynamics within a society - they put socio-economic parameters under stress and push the conflict- and problem-solving capacities of political systems to their edges. Especially those political units that are among the less consolidated and developed ones are further threatened by these processes. Hence a research unit of International Alert identified 46 countries that are likely to experience violent conflict as a result of climate change – not least menacing also regional stability. The following factors are discussed to have conflict-promoting influence in the context of a natural disaster:

- (undemocratic) regime- and governance-forms;
- little economic development;
- unequal distribution of income;
- food insecurity;
- weak functional governmental capacity in relation to other actors;
- political instability/ conflict proneness;
- strong migration and urbanisation (demographic change);
- male youth bulge.

Against this background institutionalized and coordinated disaster prevention that aims at strengthening resilience of individual and community units, and that furthermore takes into account possible side-effects on the mentioned conflict-promoting factors seems to be an important element of sustainable peace-building. In this vein the international community is increasingly turning away from exclusive post disaster relief and instead promotes preventive measures of disaster risk reduction/ adaptive capacity building (i.e. GFDRR of the World Bank).

My conceptual paper, however, wants to shed a critical light on this cross-sectoral policy field, elaborating on the following aspects: Firstly I will follow on the concept/ idea of a 'disaster', that is not known in many indigenous languages at all. Hence, what kind of human/ social-ecological relation, which potentials and responsibilities hide behind that term, and how did it evolve over time? Secondly, and related to the first aspect, it is stunning how the disaster (prevention) discourse resembles discourses on democracy/ democratization and development. In the end it seems to be a matter of (hegemonic?) North-South relations – following the concept of 'securitization' not least with view to the question whose security seems to be at risk and at what point political action is finally triggered.

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Abstract

Evidence of the impacts of climate change on human security in Africa, with reference to migration and water-related conflict

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Literature between the 1990s and today, including the 4th Assessment report, has indicated that climate change will unleash widespread environmentally-related stressors in vulnerable developing countries. Additional research has then pointed to the possibility of violent conflict, particularly referencing "climate refugees" and "water wars" in Africa. This additional research has contributed to the securitization of climate change and its projected impacts. This paper challenges those notions and attempts to fill knowledge gaps with recent fieldwork results from work on migration and water conflict in Africa. The paper highlights some of the empirical evidence about migration and water-related local level tensions pose in a period when climate change increases the potential for social stress and violent conflict.

Migration: Claims have been made that global environmental change could drive anywhere from 50 to almost 700 million people to migrate by 2050. These claims belie the complexity of the multi-causal relationship between coupled social-ecological systems and human mobility, yet they have fuelled the debate about "environmentally induced migration". Empirical evidence, notably from a 23 case study scoping study, confirms that currently environmental factors are one of many variables driving migration. The environmental signal in migration patterns may grow as the impacts of climatic and societal change become more apparent.

Water scarcity and local level conflict: The discourse on water and violence so far has much focused on the „water wars"- hypothesis. Over the last decades a huge amount of studies has been published either favouring or challenging the 'water war' thesis. At present, triggered by the climate change discourse, the dominating opinion in the research community is that water is - and will become increasingly - a source of violent conflict not in the international realm, but in the sub-national or local context. The way these conflicts evolve depends highly on the availability and functioning of local level institutions or mechanisms. Findings from field research confirm the importance of emergent local level governance structures to proper manage water resources as well as to prevent and manage water resources related conflicts.

This diversity of migration potentials linked to environmental change and the increasing pressure on water resources present challenges to governance systems not designed to cope with the impacts of complex causality, surprises and uncertainty about social-ecological thresholds, and the possibility of environmental and migration patterns recombining into a new patterns.

The paper concludes that climate change is influencing the physical tipping points for resources such as water and soil. This in turn challenges the robustness of social institutions and adaptive capacity of African population. Our findings do not support the "securitization of climate change" argument. The paper draws conclusions and points to research gaps and policy areas that require further analysis in the future.

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Abstract

Policing borders in a time of rapid climate change

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Most of the current paradigms of potential climate change are being rapidly revised in the light of new data about the likely speed of onset and the synergistic factors which will make the time scales of future negative impacts shorter. The most public response so far has been the fostering of erudite conferences like the one which I went to, in Copenhagen last week, some international policy exchanges marking the urgent necessity for making progress on the Kyoto agreements, and a host of NGOs arguing for cap and converge as the only just way forward.

What has been less noticed is the slow creep of the security factor in some recent conferences and policy positions. Whilst wishing to remain upbeat and optimistic rather than remain in denial, many governments have realized that with an estimated billion people on the move, border security is going to become a key future issue. Given that climate change is coinciding with a perception that we are living in a time of terror, it should not be surprising if this approach rapidly militarizes.

The presentation will examine how the military are responding to challenges of future area denial technologies at borders, where the flow of humanity may contain a mixture of civilians and anti-state combatants and where the sheer numbers involved may overwhelm normal border policing systems. It will address the emergence of a new generation of lethal, and sub-lethal systems for arms control both at the borders themselves, as well as at some distance either through robotic technologies, unmanned aerials or directed energy weapons, which can operate at a distance of between one and several kilometres. The presentation ends with a stark ethical challenge - whose side of the border should we be on, the refugees or the refuge deniers? Information will be provided from recent field visits to the testing grounds of some of these weapons and from arms fairs where their proliferation is being actively promoted