

# The Challenge of Climate Security in the Arctic Region

by Dennis Tänzler\*

In 2007, the latest review of climate science, by the Intergovernmental Panel on Climate Change (IPCC), outlines regional impacts of global climate change that are alarming.<sup>1</sup> It appears more than questionable whether the increase of the global mean temperature can be limited to the “safe level” of 2°C beyond pre-industrial levels – which science regards as a “safe level”. For one thing, the concentration of greenhouse gases (GHGs) in the atmosphere has generated a certain degree of climate change that is unavoidable. In addition, risks of unexpected feedback effects of global warming exist, which may further accelerate the impacts of climate change. Thus, the ability to adapt to present as well as upcoming changes is urgently needed. Such competency will become paramount in the near future – as can already be seen in the Arctic.<sup>2</sup>

Today, the Arctic is warming much faster than the global average temperature. Ice melting has accelerated, and if current trends continue, the Arctic will allow ships to sail throughout the region during the summer months and possibly throughout the year very shortly. This situation, including the large untapped natural resources of the Arctic, makes the region increasingly attractive to its immediate neighbors. Furthermore, the drastic change in the Arctic climate will severely impact the ecosystem, inevitably leading to species extinction and other distortions. Lastly, transportation through an ice-free Arctic will increase the likelihood of accidents, such as oil spills, thereby creating catastrophic environmental impacts. Territorial claims are increasingly occurring, thus the region is gaining more and more geostrategic importance.<sup>3</sup> Hence, the Arctic region serves as a prime example

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<sup>1</sup> See Intergovernmental Panel on Climate Change (IPCC) ‘Summary for Policymakers’ in Solomon et al. (eds.) *Climate Change 2007: The Physical Science Basis – Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (CUP Cambridge 2007) 1-18.

<sup>2</sup> See for a most recent assessment, Arctic Monitoring and Assessment Programme (AMAP) *Update on Selected Climate Issue of Concern: Observations, Short-lived Climate Forcers, Arctic Carbon Cycle, and Predictive Capability* (AMAP Oslo 2009).

<sup>3</sup> See Winkelmann ‘Wem gehört die Arktis?’ SWP-Aktuell 56 (2007) 1-8.

concerning the debate about climate security, discussed by a number of flagship reports published in recent years.<sup>4</sup>

In the following, it will be discussed how Arctic governance challenges relate to the debate about climate security and the overall concept of environmental security. Major aspects, such as security implications of climate change and relevant dimensions of increased environmental stress and natural resource use, are outlined. Lastly, how the Arctic situation applies to these problem areas and what conclusions can be drawn for future cooperation will be discussed.

## I. Climate Security as a Foreign Policy Issue

In parallel to the latest IPCC report, policy makers, researchers and think-tank representatives see an increasing risk of climate induced conflicts throughout the world. The former foreign minister of the UK, Margaret Beckett, gave a speech on climate and security at the British Embassy, in Berlin in October 2006, outlining that “[w]ars fought over limited resources – land, fresh water, fuel – are as old as history itself. By drastically diminishing those resources in some of the most volatile parts of the world, climate change creates a new and potentially catastrophic dynamic”.<sup>5</sup> In a similar vein, Federal Foreign Minister Frank-Walter Steinmeier outlined during the Munich Security Conference of 2007, that both energy security and climate protection need to be organized in a cooperative way. The foreign minister stressed: “If we think of the extreme consequences of *global warming* – water shortage, desertification, a rise in sea levels – then it becomes clear that climate protection is also a matter of national and international security”.<sup>6</sup> It was also Germany’s foreign minister who shed light on the overall situation in the Arctic a few months later when he stressed the need to prevent a “Cold War at the North Pole”; arguing with the underlying rationale of climate policy: “we can only win or lose together”.<sup>7</sup> The joint paper, “Climate Change and Inter-

<sup>4</sup> See e.g. German Advisory Council on Global Change (WGBU) *World in Transition: Climate Change as a Security Risk* (Earthscan Publications London 2007); The CNA Corporation ‘National Security and the Threat of Climate Change’ (2007) <<http://securityandclimate.cna.org>> (16 July 2009); and International Institute for Sustainable Development (IISD) *Climate Change and Foreign Policy: An Exploration of Options for Greater Integration* (IISD Winnipeg 2007), see <[http://www.iisd.org/pdf/2007/climate\\_foreign\\_policy.pdf](http://www.iisd.org/pdf/2007/climate_foreign_policy.pdf)> (16 July 2009).

<sup>5</sup> Beckett ‘Berlin Speech on Climate and Security’ (Speech at the British Embassy, Berlin, 24 October 2006) <<http://ukingermany.fco.gov.uk/en/newsroom/?view=Speech&id=4616005>> (16 July 2009).

<sup>6</sup> Steinmeier ‘Speech by Federal Foreign Minister Frank-Walter Steinmeier at the 43<sup>rd</sup> Munich Conference on Security Policy, Munich’ 11 February 2007) <<http://www.securityconference.de/konferenzen/rede.php?sprache=en&id=193&>> (16 July 2009).

<sup>7</sup> Steinmeier ‘Speech by Federal Foreign Minister Frank-Walter Steinmeier on “Global Warming – an International Challenge”’ (at 2<sup>nd</sup> EnBW Climate Conference, Berlin, 23 October 2007) <<http://www.auswaertiges-amt.de/diplo/en/Infoservice/Presse/Reden/2007/071023-EnBW-Klimakongress-Rede.html>> (16 July 2009).

national Security”, by the High Representative Javier Solana and the European Commission, pointed out in March 2008 that – with respect to the Arctic region – the overall constellation of territorial claims and the potential access to new trade routes challenges Europe’s ability to effectively secure its trade and resource interests in this region. In addition, the threat is likely to jeopardize relations with key partners.<sup>8</sup>

The warnings of these policy makers are evident in some comprehensive research and studies published in 2007 and 2008. Studies by the German Advisory Council on Global Change (WBGU) and the US Center for Naval Analyses (CNA), postulate mounting conflict potentials and an increase in social tensions driven by climatic changes.<sup>9</sup> In a nutshell, the findings suggest that climate change will lead to resource scarcity and environmental degradation over the long term. As outlined by the WBGU, climate change intensifies existing environmental crises such as droughts, water scarcity and soil degradation. Hence, climate change will increase land use conflicts and trigger environmental migration. This can heighten existing social and political tensions and/or can lead to new problems. Societies with weak adaptive capabilities are most severely affected since their capacities to engage in peaceful conflict resolution will further be limited. As a result, increasing use of violence to resolve conflicts could emerge, as well as escalating security risks in the affected societies and in neighboring regions. This is amplified further by an array of other global trends, notably rising levels of resource consumption, population growth and urbanization, which will manifest the adverse effects of climate change all the more.<sup>10</sup> However, the debate on environment and security, as outlined in the following section, indicates that conflicts are not inevitable, but – on the contrary – environmental cooperation can act as a mechanism in supporting peace and stability.

## II. Main Pillars of the Environmental Security Debate

Since the late 1970s and the early 1980s, heated debates on the risks associated with increasing resource scarcity and increasing environmental degradation throughout the world have persisted. Prominent examples comprise the Club of Rome’s 1972 report, “The Limits to Growth”, the US Council on Environmental Quality/Department of State 1981 report, “Global 2000”, as well as the Palme Commission 1982 report, “Common Security”.<sup>11</sup> In its 1987 “Brundtland Report,”

<sup>8</sup> See Council of the European Union ‘Report 7249/08 from the Commission and the Secretary-General/High Representative to the European Council – Climate Change and International Security’ (3 March 2008) <<http://register.consilium.europa.eu/pdf/en/08/st07/st07249.en08.pdf>> (6 July 2009).

<sup>9</sup> See German Advisory Council on Global Change and The CNA Corporation (note 4).

<sup>10</sup> See Carius/Tänzler/Maas *Climate Change and Security: Challenges for German Development Cooperation* (GTZ Eschborn 2008).

<sup>11</sup> Meadows (ed.) *The Limits to Growth: A Report for the Club of Rome’s Project on the Predicament of Mankind* (Universe Books New York 1972); United States Council of Environmental

the World Commission for Environment and Development was the first international institution to refer explicitly to the connection between environmental degradation and conflict.<sup>12</sup>

### Scarce Resources and Environmental Degradation

Changes in the environment affect societies in multifaceted ways. They do not normally occur in obvious or sudden shifts, but slowly unravel the complex balance of ecosystems. Scholars, such as Thomas Homer-Dixon, note that environmental degradation rarely results in direct violence. Instead, it can become a lasting root cause of conflict, continuously eroding the resilience of societies to resolve conflictive situations in a peaceful way.<sup>13</sup> The degradation of land, the decreasing availability of freshwater and other environmental resources can, of course, be the result of natural processes of change. However, adverse environmental change can also be exacerbated by human action. This includes the unsustainable use of natural resources by corporate or governmental agencies, which can lead to their rapid depletion or pollution and a loss of the biodiversity necessary to maintain the balance of the ecosystem. Corruption and bad governance may also contribute to a lack of sustainability, enabling the by-passing of environmental regulations.<sup>14</sup> Another potential source of environmental degradation are the side effects of conflicts, such as the deliberate targeting of infrastructures.<sup>15</sup>

### The Dark Side of Resource Abundance

While the depletion or degradation of natural resources often takes place subtly, they may also become a matter of open contention. This is especially true for resources that are not necessary to sustain livelihoods, but helps increasing the quality of life – such as valuable minerals. The popular notion of the “resource curse” describes a situation in which a country’s abundant natural resources may attract the interest of less scrupulous individuals prepared to use violent means to gain

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Quality *Global 2000* (US Government Printing Office Washington 1980); Independent Commission on Disarmament and Security Issues *Common Security* (Pan Books Ltd London 1982).

<sup>12</sup> See World Commission on Environment and Development *Our Common Future* (OUP Oxford 1987) (Brundtland Report); see for an overall discussion, Carius/Lietzmann (eds.) *Environmental Change and Security: A European Perspective* (Springer Berlin 1999).

<sup>13</sup> See e.g. Homer-Dixon *Environment, Scarcity, and Violence* (Princeton University Press Princeton 1999); and Baechler *Violence through Environmental Discrimination* (Kluwer Dordrecht 1999).

<sup>14</sup> See for a discussion e.g. Renner *The Anatomy of Resource Wars* (Worldwatch Institute Washington 2002).

<sup>15</sup> See United Nations Environmental Programme ‘Lebanon Marine and Coastal Oil Pollution International Assistance Action Plan’ prepared by the Experts Working Group for Lebanon (25 August 2006) <[http://www.unep.org/PDF/lebanon/LebanonOilSpill\\_ActionPlan20060825.pdf](http://www.unep.org/PDF/lebanon/LebanonOilSpill_ActionPlan20060825.pdf)> (16 July 2009).

and maintain control over them.<sup>16</sup> While the fight for strategic resources is nothing new, recent decades in particular have witnessed a number of violent conflicts over the access to such valuable commodities. Disorder and instability, coupled with international crime networks benefiting from the effects of globalization, allow such actors to exploit natural resources with impunity, often using forced labor. The prime targets for such activities are resources that can be easily looted or traded. This results in the so called “war economies”, such as the illegal exploitation of coltan and other mineral resources in the Democratic Republic of the Congo or diamond mining in Sierra Leone.<sup>17</sup> Besides conflicts between States, many constellations of intra-State violence have occurred due to elite groups abusing their power and maximizing their own profits. As a result, a downward spiral develops: natural resources are exploited in unsustainable ways; the situation is exacerbated by bad governance; repressive State organizations are created; and corruption and abuse lead to increasing State fragility. Consequently, tensions increase and new or existing conflicts are fuelled. It is, however, noteworthy, that countries like Norway or Botswana show that a resource curse can be avoided and that natural resources can be used peacefully and sustainably.

### Energy Security at Risk

Not only has the new concept of climate security caught the attention of research and foreign policy makers, but also other resource-related areas, like energy security, have gained increasing prominence due to higher demand trends and new levels of scarcity. Both trends, energy and climate security, are closely linked.<sup>18</sup> Although energy security has been particularly high on the agenda of industrialized countries since the oil crisis of the 1970s, current trends have reached a new quality despite the current world financial crisis. Moreover, current forecasts indicate that energy dependencies will continue to grow. The demand for energy is set to rise by almost two thirds by 2030, mainly due to the dynamic economic growth in emerging economies like China and India. The International Energy Agency (IEA) has become increasingly skeptical over the last years concerning the options to match this steep rise in the demand for affordable energy by a corresponding growth in supply.<sup>19</sup> It therefore seems clear that the price of oil will rise significantly – at the latest when demand exceeds production and mining costs continue escalating.

The present structure of global energy consumption is characterized primarily by the use of fossil energy sources such as coal, oil and gas. A number of aspects of

<sup>16</sup> See Renner (note 14) and Ross ‘What do We Know About Natural Resources and Civil War?’ *Journal of Peace Research* 41(3) (2004) 337-56.

<sup>17</sup> See e.g. Kaldor *New and Old Wars: Organized Violence in a Global Era* (Polity Press Cambridge 2001).

<sup>18</sup> See Carius/Tänzler ‘Climat énergie: une nouvelle composante due contexte de la sécurité’ *Les Cahiers de la Sécurité* 63 (2006) 157-86.

<sup>19</sup> See International Energy Agency (IEA) *World Energy Outlook 2008* (OECD/IEA Paris 2008).

the global energy supply have implications for security policy.<sup>20</sup> Competition over the use of fossil energy sources has led to political tensions and conflicts of varying intensity. In many regions, access to fossil energy sources is linked to geostrategic issues and regional hegemony. In addition, the massive concentration of oil and gas deposits in just two geographical regions poses a risk to energy security, even in the short to medium term. Over half of the world's oil reserves are located in the Gulf region, and about two thirds of the world's natural gas is found in the area between Western Siberia and the Caspian Sea. Both regions are generally considered politically unstable and have seen frequent wars and violent conflict. As a result of these converging trends of climate and energy security, the international support to expand the use of renewable energies has gained momentum throughout the last years. The creation of the International Renewable Energy Agency (IRENA) in January 2009, serves as an excellent example.

### Declining Fish Stocks

Fish stocks are rapidly declining throughout the world – much faster than any other food source. If current trends continue, forecast points out that fish supplies may collapse by the mid-21<sup>st</sup> century.<sup>21</sup> The reasons for this trend are manifold. First of all, fishing practices – in particular over-fishing – have been largely unsustainable in the past. The resulting damage to marine ecosystems was ignored for a long time, only recently some recognition of this fact has been made, thereby allowing some fish stocks to regenerate. In addition, climate change is increasingly impacting marine ecosystems. On the one hand, the warming up of the sea is unbalancing marine ecosystems. On the other hand, the absorption of carbon dioxide is making the sea increasingly sour. This not only directly affects the fishing industry, it also greatly impact the micro-organisms that form the foundation of food chains in the marine ecosystem.<sup>22</sup> Finally, pollution has been negatively impacting the world's fish stocks.

These developments pose a number of challenges. The most obvious is to prevent food insecurity in times when the demand for fish is still rapidly growing. The collapse of fish stocks would also have enormous impacts on related fishing industries. In sum, these elements can have a significant potential for causing social friction and unrest that add to existing socio-economic conflicts. In addition, current conflicts over access to fishing grounds between major fishing nations may escalate.

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<sup>20</sup> See e.g. Kalicki/Goldwyn (eds.) *Energy and Security: Toward a New Foreign Policy Strategy* (Woodrow Wilson Center Press/John Hopkins University Press Washington/Baltimore 2005).

<sup>21</sup> See Food and Agricultural Organization (FAO) *State of World Fisheries and Aquaculture 2008* (FAO Rome 2009).

<sup>22</sup> See German Advisory Council on Global Change (WGBU) *The Future of Oceans – Warming Up, Rising High, Turning Sour* (WGBU Berlin 2006).

### III. Promoting Peace by Cooperative Management of Natural Resources

The different dimensions of environmental security as well as the role of climate change as threat multiplier, give reason for alarm of future environmentally-induced conflicts. However, empirical evidence of past incidences of resource scarcity and environmental degradation indicate that there are also examples on environmental cooperation as a pathway to peace and stability.<sup>23</sup> Dependence on the same water resources, for example, can create communities of diverse users and stakeholders, fostering cooperation and transcending conflicting economic interests. As a result, advantages for all participants are generated through the cooperative management of natural resources. For this to be successful, however, established modes of perception will also have to change and the potential for forging communities and solidarity emphasized. As cooperation on shared water resources indicate, environmental issues can encourage people to cooperate at the societal as well as the international level. Social interest groups can make use of mutual ecological dependence across territorial borders to facilitate cooperation, which is often the first step towards initiating dialogue.

Water cooperation has often led to the establishment of institutions that can help balance conflicting interests and regulate water scarcity, especially in trans-boundary contexts. Several requirements have been identified for such institutions to exist.<sup>24</sup> Among the key aspects, are the treaties that explicitly give rights and obligations to all riparian countries as well as the availability of sufficient human, technical and financial resources to ensure the development of comprehensive management plans and the enforcement of their implementation. However, it remains to be seen how effective these arrangements are under conditions of a changing climate. However, they constitute a promising approach as a starting point to deal with the challenges outlined. After all, one highly successful example of pooled natural resource management acting as confidence-building measures in a post-war environment is the European Coal and Steel Community (ECSC) – which ultimately led to the creation of the European Union.

### IV. Climate, Environment and Security – the Importance of Arctic Governance

The evolving issue of climate security is creating a unique situation in the Arctic region. The Arctic will become more at risk from the combined effects of climate change and increased human activity, but at the same time new options will be

<sup>23</sup> Conca/Dabelko (eds.) *Environmental Peacemaking* (Woodrow Wilson Center Press/John Hopkins University Press Washington/Baltimore 2006).

<sup>24</sup> See Wolf et al. 'Managing Water Conflict and Cooperation' in: The Worldwatch Institute *State of the World 2005: Redefining Security* (WW Norton & Company New York 2005) 80-95.

come viable (e.g. through new transportations routes). There is some reason to refer to the changing Arctic as the first climate change induced conflict constellation, because it amplifies not only already existing environmental stress, but also creates an entirely new regional situation, which in the absence of climate change, would not have occurred. The interplay between competing claims for access to resources – be it oil and gas or fish stocks – the additional climate impact when these newly explored fossil fuels are in fact used and the risks of further environmental degradation, due to the difficult exploration in a harsh environment, can be regarded as risk multipliers. Finally, indigenous populations are particularly susceptible to the increasing consequences of climate change, which affects their fundamental economic and social interests.

Accordingly, the need for cooperation is huge, not least because of the positive experience gained with environmental cooperation as a pathway to peace and stability in the past. Conferences, like in Ilulissat in May 2008 or in Berlin in March 2009, illustrate how relevant the discourse of environmental security and its respective pillars for the Arctic regions are.<sup>25</sup> The focus of the Berlin conference “New Chances and New Responsibilities in the Arctic Region”, jointly organized by Germany, Denmark and Norway, underlines the relevance of international law, international institutions as well as the important principles of sustainable development in order to build a capable Arctic governance structure.

Such a governance structure will, of course, be based on existing approaches. This is especially true for the provisions of the UN Convention on the Law of the Sea (UNCLOS),<sup>26</sup> which provides the basis for the settlement of disputes and also contains rules for the use of living and non-living resources and the protection of the environment. In addition, the further development of international institutions and organizations such as the Arctic Council or the International Maritime Organization is needed to adequately address the challenges of climate security in the Arctic and to provide for environmental security. Strict environmental standards are required to provide for a sustainable exploitation of resources. New prospects for fishing due to reduced sea ice coverage may require an expansion of international conservation and management regulations in order to avoid unregulated fisheries. The safety of navigation, search and rescue, environmental monitoring and disaster response needs to be ensured to avoid detrimental effects of increased Arctic commercial navigation. All these challenges call not only for close political, but also scientific cooperation.

Accommodating different perspectives and interests can help widen the base of available management options and facilitate sustainable solutions in the Arctic. Building mutual trust through cooperation and joint fact finding can – along the line of cooperative water arrangements – contribute to joint perspectives on risk

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<sup>25</sup> See for more information on these and related conferences <[www.arctic-governance.org](http://www.arctic-governance.org)> (16 July 2009).

<sup>26</sup> United Nations Convention on the Law of the Sea (concluded 10 December 1982, entered into force 16 November 1994) 1833 UNTS 396.



and responsibilities in this region and beyond. Such a perspective may play a key role in understanding that – from a perspective of global climate security – the exploration and use of so far untapped fossil fuel resources in the Arctic will have severe implications for the global climate: the additional emissions of GHG will further amplify environmental stresses around the world with the potential security implications outlined by foreign policy makers and researchers alike.

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