

**PD Dr. Hans Günter Brauch, Alte Bergsteige 47, D-74821 Mosbach, Germany,
<brauch@afes-press.de>**

Value of Science Partnership and the Emerging Security Challenges

1. NATO's Science Division was a path-maker of the international debate on environmental security with its funding of many workshops and with its CCMS project on environmental security of the US DoD and the German Environment Ministry in the 1990s.
2. My organization *Peace Research and European Security Studies* (AFES-PRESS) has received several grants for workshops on the trans-Mediterranean cooperation in the framework of the pan-European Conferences on International Relations in Vienna, Canterbury, The Hague and Istanbul that have resulted in five books, four in the Hexagon Book Series on Human and Environmental Security and Peace, the first with forewords by the Secretary General of NATO and of the Arab League published in 2003 and the last three as the Global Environmental and Human Security Handbook for the Anthropocene.
3. The term Anthropocene was coined by Paul C. Crutzen, a Nobel Laureate in Chemistry for his work on the ozone layer depletion, which refers to the human intervention into the earth system since the industrial revolution that has resulted in anthropogenic climate change and that may pose serious future international, national, human and environmental security dangers during the 21st century.
4. Since 2004 climate change has been increasingly 'securitized'. According to the theory of securitization by Ole Wæver of the Copenhagen School a process of securitization exists whenever a policy-maker declares an issue being of 'utmost importance' thus upgrading an ordinary political issue into the security realm requesting 'extra-ordinary political measures' to solve it. Securitization succeeds if the audience (the people) is convinced that the security dangers are real.
5. Since 2007 three parallel securitization debates have occurred on climate change as an international security issue within the framework of the UN (since April 2007), the EU (since March 2008), but also of NATO. Since 2007 the debate on the impact of climate change on US national security is underway.
6. Since 2005 climate change has been addressed as a human security concern by the Global Environmental Change and Human Security (GECHS) project of IHDP and during the Greek presidency of the Human Security Network in May 2008 in Athens.
7. But two years go the outcome of the 15th conference of parties of the UNFCCC has shown that no 'extra-ordinary measures' were taken at COP 15 in Copenhagen, when the participants failed to agree on a legally binding Post-Kyoto regime and to approve making funds available for helping developing countries to adapt to and mitigate against the effects of climate change that would have amounted to less than 1% of the amount spent by the industrialized countries to bailout their banks in the first round of the global financial crisis. Although Mexican diplomacy succeeded to firmly re-embed the climate change debate in the UN framework, nevertheless at Cancun COP 16 failed as COP 17 that has started today at Durban will fail to adopt legally binding and enforceable GHG emission reduction obligations.
8. Since 1992 (the adoption of UNFCCC), 1997 (adoption of the Kyoto Protocol) and 2007 (4th IPCC Report and the G-8's commitment to an 80% GHG reduction goal by 2050), humankind has been confronted with a "climate paradox".
9. While most states agree that CC has been anthropogenically induced and that the increase of global average temperature should be stabilized at 2°C above pre-industrial levels, which according to repeated policy declarations of the G8 would require global reductions of GHG by 50% until 2050 or by 80% by the industrialized countries. But there is a huge implementation gap, also among the G-8, 6 of them being NATO countries to implement their reduction obligations under the Kyoto Protocol.
10. Four of the eight G-8 countries have failed to do so, among them three NATO countries. Globally, GHG emissions have been significantly rising since 1990 and also during 2010 according to recent US and UN sources released in November 2011.

11. Recent scientific studies have concluded that some countries will experience a 2°C increase of temperature between 2020 and 2030. Thus the probability that humankind will experience the security effects of dangerous (2-4°C temperature increase) or catastrophic climate change (4-6°C temperature increase) and the possibility that climate change will cross certain thresholds that may trigger so-called tipping points in the climate system will probably increase.
12. Are the states, international organizations – including NATO and the EU – and humankind prepared to understand and address the possible security implications of climate change in a proactive manner?
13. There is a major difference on these emerging security challenges. It is not anymore ‘they’ who pose this new challenge rather ‘we’ have become the major environmental security threat with our consumption patterns of fossil fuels since the industrial revolution.
14. The new emerging security challenges posed by global environmental and climate change cannot be solved by strategies of business-as-usual and with our present worldviews and mindsets.
15. Leading scientists, like Prof. Clark of Harvard University, Prof. Schellnhuber, director of the Potsdam Institute on Climate Impact Research, and Nobel Laureate Paul C. Crutzen, have called for a second scientific or *Copernican revolution towards Sustainability* and the German Advisory Council on Global Change, headed by Prof. Schellnhuber, proposed in its latest flagship report for a *New Social Contract for Sustainability* as a policy-relevant intellectual contribution to the RIO+20 process that will culminate at Rio de Janeiro in June 2012.
16. As we have only 38 years left to achieve the 80% reduction of GHG by 2050, the heads of states and governments of the G-8 countries have repeatedly called for since 2007. As the GHG are not declining but rather increasing despite of the global financial and economic crises, we need a forward looking transformation research and education but first of all proactive policies that address as to how future climate-induced conflicts and mass migrations can be prevented by non-military means, first of all by implementing the declared policy goals through a progressive decarbonisation of the energy sector. Policies for a transition towards sustainable development are a proactive security policy to reduce the likelihood that climate conflicts will occur in the future.
17. This requires forward looking thinking, anticipatory research and learning and proactive political action. We need a ‘new responsibility to protect the earth’ against the societal consequences of anthropogenic climate change and its four major physical effects: temperature increase, precipitation change, sea level rise and the increase in the number and intensity of hydro-meteorological hazards and societal disasters as the recent IPCC report (SREX) emphasized.
18. A continued thinking and acting within the Hobbesian ‘business as usual paradigm’ will most likely fail to bring about a big transformation towards sustainability and is unlikely to maintain international peace and security with primarily political means, what has been a major goal and achievement of NATO since its establishment in 1949.
19. To conclude and to be a bit provocative, we need a new technical, socio-economic and socio-political ‘*sustainability revolution*’ within the next few decades. The *agricultural revolution* took 4000 years to evolve during the Holocene after the end of the glacial period. The *industrial revolution* occurred during the long 19th century that started with Watt’s invention of the steam engine and ended on the Eve of World War. Thus, humankind needs a new major transformation towards sustainability in the future.
20. The inability to agree on legally binding commitments on GHG reductions and their lacking national implementation may have security consequences also for NATO. To postpone the adoption of a legally binding Post-Kyoto Agreement to 2016 and its entry into force to 2020 may result in more extreme weather events (storms, floods and droughts) and most likely in severe climate induced migration and conflicts. This is both a costly climate and risky security policy.