

Informal Thematic Debate of the 65th Session of the United Nations General Assembly on Human Security

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Interactive Debate 2: Human Security – Its Application and Added Value

Background paper prepared by

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The Environmental Dimension of Human Security: Freedom from Hazard Impacts²

1. Natural Disasters Pose Multiple Threats to Human Security

The cascading effects of a devastating earthquake and tsunami that triggered a major nuclear catastrophe in Japan on 11 March 2011 have documented the utmost political relevance of Ulrich Beck's theory of a "global risk society".³ These new risks are delocalized, incalculable and non-compensatable and their effects do not respect the nation state, have a long latency period and social effects as their causes and consequences can no longer be reliably predicted.

However, as a comparison of the number of victims of the earthquakes in Haiti and in Chile in 2010, as well as the tsunamis of 26 December 2004 and 11 March 2011 shows, their death toll differed due to the degree of social vulnerability as a result of the degree of protection and coping capacities but also due to local resilience based on the empowerment of the people. While these geophysical but also climate-related hazards cannot be prevented, their specific impact can be reduced.

While these geophysical hazards neither affected the national security of the countries nor the international security of the region most impacted, the tragic events did, however, have severe impacts on the human security of the human beings and communities most affected as well as on their water, soil, food, health and livelihood security. This is the background for the proposal of a "*Fourth Pillar of Human Security*" referring with "*Freedom from Hazard Impacts*" to the policy agenda dealing with the environment, sustainable development and disasters and the respective organizations, programmes and initiatives within the UN system.

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² The author appreciates the critical comments and suggestions of Úrsula Oswald Spring, UNAM-CRIM (Mexico). This paper draws also on our joint scientific work and has benefitted from intensive discussions. He is grateful to Mr. Michael Headon (UK) for language editing this text.

³ Ulrich Beck: "Living in and Coping with World Risk Society", in: Hans Günter Brauch; Ursula Oswald Spring; Czeslaw Mesjasz; John Grin; Patricia Kameri-Mbote; Bechir Chourou; Jörn Birkmann (Eds.), 2011: *Coping with Global Environmental Change, Disasters and Security – Threats, Challenges, Vulnerabilities and Risks* (Berlin – Heidelberg – New York: Springer-Verlag): 11-15; Ulrich Beck, 2009: *World at Risk* (Cambridge: Polity Press); Ulrich Beck, 2006: *The Cosmopolitan Vision* (Cambridge: Polity Press); Beck, Ulrich, 2005: *Power in the Global Age* (Cambridge: Polity Press); Ulrich Beck, 1999: *World Risk Society* (Cambridge: Polity); Ulrich Beck, 1992: *Risk Society: Towards a New Modernity* (London: Sage).

This paper will address the two parallel debates on environmental and human security (2.), with the goal of introducing the environmental dimension of human security (3.), it will sketch the proposal for a fourth pillar of Human Security as “Freedom from Hazard Impacts” (4.), it will review the environment-related work of the Human Security Network and Friends of Human Security and of the first debate on human security at the UN on 22 May 2008 (5.), it will refer to threats to the environmental dimension of human security (6.), discuss the societal impacts of global environmental change for human security and its sectoral components (7.), address human security perspectives on water and soil security (8.), it will suggest human security responses to these environmental dangers (9.) and it will conclude with a discussion of strategies for addressing and coping with environmental threats to human security (10.)

2. Two Parallel Policy Debates

Since 1989 and 1994, two parallel policy debates have emerged on environmental and human security that have reached both the UN General Assembly and the UN Security Council. To both, the UN Secretary-General has responded with several reports, most recently with his first reports on *Climate change and its possible security implications* of 11 September 2009 (A/64/350) and on *Human Security* of 8 March 2010 (A/64/701).⁴ This report specifically refers to “the threats posed by natural disasters” for human security and it suggests applying the concept to five priorities of the UN: a) global financial crisis, b. volatility of food prices, c. spread of infectious diseases and other health threats, d. climate change and increase in the frequency and intensity of climate-related hazard events, and e. prevention of violent conflicts, peacekeeping and peace-building. This paper focuses on the fourth priority.

3. Goal: Introduce the Environmental Dimension of Human Security

The *International Human Dimensions Programme on Global Change* (IHDP) with its project on *Global Environmental Change and Human Security* (GECHS) analysed (1999-2009) the linkage between environmental change and human security⁵, and in the forthcoming Fifth Assessment Report Working Group II of the IPCC, addresses in chapter 12 for the first time the impact of global climate change on human security.⁶

The *Global Environmental and Human Security Handbook for the Anthropocene* that is available now in three volumes with 270 peer-reviewed chapters by 300 authors from 100 countries argues that besides the end of the Cold War and globalization, the human-induced global environmental change has been the third major cause of a global reconceptualization of security and of a redefinition of national and international security interests.⁷ This handbook

⁴ UN General Assembly: *Climate change and its possible security implications: Report of the Secretary-General*, 11 September 2009, A/64/350, at: <<http://www.unhcr.org/refworld/docid/4ad5e6380.html>>; UN General Assembly: *Human security: Report of the Secretary-General*, 3 March 2010, A/64/701, at: <<http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N10/263/38/PDF/N1026338.pdf?OpenElement>>.

⁵ GECHS, at: <<http://www.gechs.org/>>.

⁶ IPCC, “Fifth Assessment Report (AR5) Authors and Review Editors”, at: <http://www.ipcc.ch/pdf/ar5/ar5_authors_review_editors_updated.pdf>.

⁷ Hans Günter Brauch; Úrsula Oswald Spring; Czeslaw Mesjasz; John Grin; Pal Dunay; Navnita Behera Chadha; Béchir Chourou; Patricia Kameri-Mbote; P.H. Liotta (Eds.), 2008: *Globalization and Environmental Challenges: Reconceptualizing Security in the 21st Century* (Berlin – Heidelberg – New York: Springer-Verlag); Hans Günter Brauch; Úrsula Oswald Spring; John Grin; Czeslaw Mesjasz; Patricia Kameri-Mbote; Navnita Behera Chadha; Béchir Chourou; Heinz Krumpal (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin – Heidelberg – New York: Springer-Verlag); H.G. Brauch et al. (Eds.), 2011: *Coping with Global Environmental Change*,

developed the environmental dimension of human security further and it documents the global scientific debates on human, environmental, water, food, health, livelihood and gender security, it refers to the multiple new human and environmental security threats, challenges humankind has been *facing* and will face during the 21st century, and it reviews the global debate on *coping* with *Global Environmental Change, Disasters and Security*.⁸

4. Fourth Human Security Pillar: Freedom from Hazard Impacts

In 2005, two reports for the United Nations University Institute on Environment and Human Security (UNU-EHS) suggested “Freedom from Hazard Impact” as the fourth pillar of human security, introduced as its “environmental security dimension” to focus on “reducing vulnerability of societies confronted with natural and human-induced hazards”.⁹

Previously GECHS (1999) in its science plan had argued that several types of environmental change affect *human security*: a) natural disasters, b) cumulative changes or ‘slow-onset changes’, c) accidental disruptions or industrial accidents, d) development projects, and e) conflict and warfare.

UNU-EHS initially focused on the *response* to floods and droughts by reducing vulnerability and enhancing the coping capabilities of societies confronted with environmental and human-induced hazards. Human security focuses on threats that endanger the lives and livelihoods of individuals and communities and on interrelated social, political, institutional, economic, cultural, technological and environmental variables that amplify the impacts of environmental change. Its mission is “to improve the knowledge base for the assessment of vulnerability and coping capacity of societies facing natural and human-induced hazards, in a changing and often deteriorating environment” and “the understanding of cause and effect relationships and to offer options to help reduce the vulnerabilities of societies”. The fourth pillar of HS as “Freedom from Hazard Impacts” calls for reducing the environmental and social vulnerability and enhancing the coping capabilities of societies confronted with environmental, both geophysical and human-induced climate-related hazards.

“Freedom from hazard impact” implies that people can mobilize their resources to address sustainable development goals, rather than having to remain within the vicious circle of the survival dilemma.¹⁰ Human security as freedom from hazard impact is achieved when people

Disasters and Security –Threats, Challenges, Vulnerabilities and Risks (Berlin et al.: Springer-Verlag); for detailed documentation see at: <<http://www.afes-press-books.de/html/hexagon.htm>>.

⁸ The volume on *Facing Global Environmental Change* contains 15 chapters on the global debates on environmental security and 23 chapters on human security; see also for the proposals for combining both perspectives: Úrsula Oswald Spring; Hans Günter Brauch; Simon Dalby, 2009: “Linking Anthropocene, HUGE and HESP: Fourth Phase of Environmental Security Research”, in: H.G. Brauch et al. (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin et al.: Springer-Verlag): 1277-1294.

⁹ Janos Bogardi; Hans Günter Brauch, 2005: “Global Environmental Change: A Challenge for Human Security – Defining and conceptualising the environmental dimension of human security”, in: Andreas Rechkemmer (Ed.): *UNEO – Towards an International Environment Organization – Approaches to a sustainable reform of global environmental governance* (Baden-Baden: Nomos): 85-109; Hans Günter Brauch, 2005: *Environment and Human Security. Freedom from Hazard Impact*, InterSecTions, 2/2005 (Bonn: UNU-EHS); at: <<http://www.ehs.unu.edu/file.php?id=64>>; Hans Günter Brauch, 2005a: *Threats, Challenges, Vulnerabilities and Risks in Environmental Human Security*. Source, 1/2005 (Bonn: UNU-EHS); at: <<http://www.ehs.unu.edu/index.php?module=overview&cat=17&menu=36>>; Hans Günter Brauch, 2008a: “Conceptualising the environmental dimension of human security in the UN”, in: *International Social Science Journal*, Special Issue. *Rethinking Human Security* [Goucha, Moufida; Crowley, John (Eds.)], (September): 19-48.

¹⁰ Hans Günter Brauch, 2008: “From a Security towards a Survival Dilemma”, in: H. G. Brauch et al. (Eds.): *Globalization and Environmental Challenges: Reconceptualizing Security in the 21st Century*. Hexagon Series on Human and Environmental Security and Peace, vol. 3 (Berlin et al.: Springer-Verlag): 537-552.

who are vulnerable to environmental hazards and disasters that are often intensified by other associated societal threats (poverty), challenges (food insecurity), vulnerabilities and risks (improper housing in flood-prone and coastal areas) are better warned of impending hazards, and are *protected* against these impacts and are *empowered* to prepare themselves for them.

5. Human Security Network, Friends of Human Security and First Debate on Human Security at the UN on 22 May 2008

This goal has been endorsed by the Human Security Network (HSN) in the conclusions of its ministerial meetings in Bangkok (2006) and Athens (2008). The Greek presidency addressed climate change as a challenge for human security¹¹ with a focus on climate change impacts on development, women, children and migrants.¹² The Friends of Human Security, co-chaired by the Permanent Representatives of Japan and Mexico at the United Nations, has discussed environmental problems and climate change, together with disasters, since its second meeting in April 2007 (November 2007, May 2008, November 2008, June 2009, December 2009) as one of its five key agenda items.¹³

In the first systematic meeting of the UN General Assembly on human security on 22 May 2008, many countries listed as major threats to HS environmental degradation, climate change, natural disasters and forced migration (EU, Iraq, Japan, Mexico, Tonga, Greece, Mongolia, Turkey, Egypt, Austria, Portugal, Chile, Philippines, Cuba, Brazil, Kazakhstan, Israel).¹⁴

In his first report on Human Security of 8 March 2010, the Secretary-General applied the human security concept to five priorities of the UN, including “Climate change and the increase in the frequency and intensity of climate-related hazard events”, which he considered as “one of the most pressing issues of our time”, adding that “among its many consequences are an increase in the frequency, variability and intensity of events such as floods, storms, desertification and droughts” that “disrupt harvests, deplete fisheries, erode livelihoods and increase the spread of infectious diseases”, where “vulnerable groups are particularly at risk” from the “the immediate impacts of climate-related disasters” and from their societal outcomes, such as “displacement and migration”. He also noted that many governments agree

on the need to place climate change in the broader context of sustainable development and poverty eradication ...[by] mainstreaming disaster reduction and risk management into national development plans, promoting community-based adaptation and mitigation plans, and accelerating the transfer and deployment of information, knowledge and technologies, especially to those countries most vulnerable to climate change.

The Secretary-General also stressed the need for “a better understanding of the interlinkages between climate change and other dimensions of human security” that could “help assess the

¹¹ “Greece assumes the Chairmanship of the Human Security Network May 2007-2008”; at: <http://www.mfa.gr/www.mfa.gr/Articles/en-US/ts18052007_KL2115.htm>.

¹² Claudia F. Fuentes Julio, Hans Günter Brauch, 2009: “The Human Security Network: A Global North-South Coalition”, in: H. G. Brauch et al. (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin et al.: Springer-Verlag): 991-1002.

¹³ The seventh meeting of the FHS occurred on 10 December 2009; see at: <<http://ochaonline.un.org/OutreachandABHS/Outreach/2009Activities/SeventhmeetingoftheFriendsofHumanSecurity/tabid/6429/language/en-US/Default.aspx>>.

¹⁴ See for details at: <<http://www.un.org/News/Press/docs/2008/ga10709.doc.htm>>; and for documentation at: <<http://www.un.org/ga/president/62/ThematicDebates/humansecurity.shtml>>. This debate was analysed in detail by: Hans Günter Brauch, 2009: “Human Security Concepts in Policy and Science“, in: H. G. Brauch et al. (Eds.): *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin et al.: Springer-Verlag): 965-990.

causes and identify the actions needed to manage the combined risks of climate-related insecurities”, especially in fragile spots where “the international community is required to assist countries in reducing the social stresses that emerge when State institutions are overstretched and the delivery of basic services is inadequate”.¹⁵

6. Threats to the Environmental Dimension of Human Security

Although the environment was listed as one of seven components of the initial UNDP report of 1994¹⁶, it was not until 2007 that climate change became a key agenda item of the human security debate at the UN. Hence it may now be appropriate to add “Freedom from Environmental and Hazard Impacts” as the fourth pillar of human security. Putting the environment and natural hazards on the human security agenda also means addressing its impacts on water, soil, food, health and livelihood security from a human security perspective.

Global environmental change (GEC) as the outcome of the interaction between the earth and human systems and of direct human interference with nature has gradually become a scientific, political and security issue since the early 1970s; anthropogenic climate change has become an objective security danger that has been *scientized* since the early 1970s, and *politicized* since 1988 with the mandate to establish the IPCC and to launch the negotiations for a UN Framework Convention on Climate Change that was approved at the earth summit (UNCED) in Rio de Janeiro in June 1992.

Climate change has been perceived as a security concern and thus has been *securitized* since 2004, when policymakers declared climate change as issues of “utmost importance” for international and human security that require “extraordinary measures”. While the debates on international security (UN, EU) have addressed climate change as a ‘threat multiplier’, the national security debate on climate change (e.g. in the USA since 2007) has addressed only the threats to US national security and how to respond to cope with these threats.¹⁷

Thus, a human security perspective on climate change places human beings, communities and humankind as reference objects at the centre, addresses how *physical* (temperature, sea-level rise, precipitation change, increase in intensity of hazards) and *societal* impacts (migration, crises, conflicts) of climate change pose HS dangers, and how human beings, states and the international community can cope proactively to avoid major human catastrophes.

As ‘we’ are the threat (through our consumption of fossil fuels), it is ‘we’ who have to change our prevailing consumerist culture and must adapt governance structures to reduce global greenhouse gas (GHG) emissions by 50% between 1990 and 2050. This implies a fundamental shift from *business-as-usual* strategies towards an alternative sustainability paradigm.¹⁸

¹⁵ UN General Assembly: *Human security: Report of the Secretary-General*, 3 March 2010, A/64/701; at: <<http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N10/263/38/PDF/N1026338.pdf?OpenElement>>.

¹⁶ UNDP, 1994: *Human Development Report 1994. New Dimensions of Human Security* (New York – Oxford - New Delhi: Oxford University Press).

¹⁷ See for a review of this threefold debate: Hans Günter Brauch, 2009a: “Securitizing Global Environmental Change”, in: H. G. Brauch et al. (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin et al.: Springer-Verlag): 65-102; for a debate on climate change as a security issue at the UN until end of 2010, see: Gerrit Kurtz: “Securitization of Climate Change in the United Nations 2007-2010”, in: Jürgen Scheffran; Michael Brzoska; Hans Günter Brauch; Peter Michael Link; Janpeter Schilling (Eds.): *Climate Change, Human Security and Violent Conflict: Challenges for Societal Stability* (Berlin – Heidelberg – New York: Springer-Verlag, 2011) *forthcoming*.

¹⁸ Will Steffen; Angelina Sanderson; Peter D. Tyson; Jill Jäger; Pamela A. Matson; Berrien Moore III; Frank Oldfield; Katherine Richardson; Hans Joachim Schellnhuber; B.L. Turner II; Robert J. Wasson, 2004: *Global Change and the Earth System. A Planet under Pressure. The IGBP Series* (Berlin – Heidelberg – New York:

Given this socio-political context, a *scientific human security approach* addresses objective, subjective and inter-subjective security questions in a transdisciplinary research setting focusing on complex linear, nonlinear and chaotic interactions within and between the earth and human systems (pressure), its effects (such as environmental scarcity, degradation and stress), its impacts (such as climate-induced hazards), its societal outcomes (migration, crisis, conflicts and their prevention) and the coping strategies needed (governance) to achieve human security by reducing risks related to climate change.

A *policy-focused human security approach* to climate change prioritizes the climate-induced security threats humankind will face during the 21st century. Its task is to develop policies for coping better with the human security impacts of climate change by measures of mitigation, adaptation and resilience-building both to *protect* and to *empower* the affected people. This implies at the local level the development of survival strategies¹⁹ and micro-business, and at the global level economic strategies for a gradual decarbonization²⁰ and dematerialization of the world economy.

While in national security approaches to climate change political, economic and military power remains crucial, in the human security approach primarily non-military means prevail. The development of new scientific knowledge, its technological application and its effective political implementation in the economic sector and in society matters. A *human security approach* to climate change allows policymakers and scientists to develop evidence by analysing probable causal pathways and proposing coping strategies.

A *scientific human security approach* may also contribute to an anticipatory learning enabling humans to better understand the nature of the threats facing humankind. The task of a *policy-focused human security strategy* is to allocate the scarce financial, environmental and scientific resources to the development and implementation of policy measures in order to achieve the agreed policy goals in a proactive manner.

Springer-Verlag); UNEP, 2007a: *Global Environmental Outlook, GEO 4* (Nairobi – New York: UNEP); at: <www.unep.org/geo/geo4/media/index.asp> and: <<http://www.earthprint.com/>>; William C. Clark; Paul J. Crutzen; Hans Joachim Schellnhuber, 2004: “Science and Global Sustainability: Toward a New Paradigm”, in: Hans Joachim Schellnhuber; Paul J. Crutzen; William C. Clark; Martin Claussen; Hermann Held (Eds.): *Earth System Analysis for Sustainability* (Cambridge, MA; London: MIT Press): 1-28; Ursula Oswald Spring; Hans Günter Brauch, 2011: “Coping with Global Environmental Change – Sustainability Revolution and Sustainable Peace”, in: H. G. Brauch et al. (Eds.), 2011: *Coping with Global Environmental Change, Disasters and Security – Threats, Challenges, Vulnerabilities and Risks* (Berlin et al.: Springer-Verlag): 1487-1503.

¹⁹ Úrsula Oswald Spring, 1991: *Estrategias de Supervivencia en la Ciudad de México* (Cuernavaca, México: CRIM-UNAM); Úrsula Oswald Spring, 2009: “A HUGE Gender Security Approach: Towards Human, Gender and Environmental Security”, in: H. G. Brauch et al. (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin et al.: Springer): 1165-1190.

²⁰ See Jesse H. Ausubel, 2003: “Decarbonization: The Next 100 Years”, Alvin Weinberg Lecture, Oak Ridge National Laboratory (5 June 2003): at: <http://phe.rockefeller.edu/PDF_FILES/oakridge.pdf>; Reuel Shinnar; Francesco Citro, 2008: “Decarbonization: Achieving near-total energy independence and near-total elimination of greenhouse emissions with available technologies”, in: *Technology in Society*, 30,1 (January): 1-16; Gunnar Luderer; Valentina Bosetti; Michael Jakob; Jan Steckel; Henri Waisman; Ottmar Edenhofer: “Towards a Better Understanding of Disparities in Scenarios of Decarbonization: Sectorally Explicit Results from the RECIPE Project”, Presented at the 10th IAEE European Conference, Vienna, 2009; at: <<http://www.pik-potsdam.de/members/jakob/publications/recipe-understanding-disparities-in-models>>; Ottmar Edenhofer; C. Carraro; J.-C. Hourcade; K. Neuhoff; G. Luderer; C. Flachsland; M. Jakob; A. Popp; J. Steckel; J. Strophsche; N. Bauer; S. Brunner; M. Leimbach; H. Lotze-Campen; V. Bosetti; E. De Cian; M. Tavoni; O. Sassi; H. Waisman; R. Crassous-Doerfler; S. Monjon; S. Dröge; H. van Essen; P. del Río, 2009) *RECIPE: The Economics of Decarbonization – Synthesis Report* (Potsdam: Institute for Climate Impact Research); UNDP, Human Development Research Office 2007/21 (New York: UNDP); at: <http://hdr.undp.org/en/reports/global/hdr2007-2008/papers/de%20Buen_Odon.pdf>.

This may require from a scientific point of view a ‘political geo-ecology for the Anthropocene’²¹ but from a scientific and policy perspective a fundamental shift from short-termism and economic prevalence towards adopting a legally binding post-Kyoto regime in order to promote sustainable development and resilience in the poorest countries most affected by climate change, and to recover environmental services for adaptation and mitigation globally.

7. Societal Impacts of Global Environmental Change for Human Security and its Sectoral Components

Global environmental change comprises the complex interaction among four key factors of an “environmental quartet” of water, soil, climate change and biodiversity, representing the earth system. These often interact in a linear, non-linear or chaotic way with the four key components of a “human quartet” consisting of population change, rural and urban systems, socio-economic and cultural processes, that may trigger different environmental effects such as scarcity, degradation and stress, as well as direct impacts such as climate-induced natural hazards.²²

Both together may trigger extreme societal outcomes, such as displacement, internal and international migration, and crises and conflicts from nonviolent protests, food riots and violent internal confrontations and wars. These may directly affect human security and its referent objects individual human beings, local communities as well as humankind. However, those who have influenced this process most and those who have become its primary victims are not the same, and this has caused the many global equity issues discussed at COP 15 and COP 16 of the UNFCCC at Copenhagen (2009) and Cancun (2010).²³

From a human security perspective climate change directly impacts on other sectoral concepts, such as water, soil, food, health and livelihood security. Climate change severely affects water quantity and quality, thus posing a direct challenge to human health, where water-borne, vector- and temperature-related diseases challenge the health system and a safe water supply. Water is also crucial for ecosystem services, biodiversity, soil and food security. Water, soil, biodiversity and health security issues have progressively been defined by pollution, waste, toxics and later by climate-change-related hazards and disasters.

²¹ Hans Günter Brauch, Simon Dalby, Úrsula Oswald Spring: “Political Geoecology for the Anthropocene”, in: H.G. Brauch et al. (Eds.): *Coping with Global Environmental Change, Disasters and Security – Threats, Challenges, Vulnerabilities and Risks* (Berlin et al.: Springer-Verlag, 2011): 1453-1486.

²² These have been analyzed in the framework of the author’s PEISOR model, e.g. in: Hans Günter Brauch, 2009a: “Securitizing Global Environmental Change”, in: H.G. Brauch et al. (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin – Heidelberg – New York: Springer-Verlag): 65-102; Hans Günter Brauch; Úrsula Oswald Spring, 2009: *Securitizing the Ground. Grounding Security* (Bonn: UNCCD).

²³ Hans Günter Brauch; Úrsula Oswald Spring, 2011: “Introduction: Coping with Global Environmental Change in the Anthropocene”, in: H.G. Brauch et al. (Eds.), 2011: *Coping with Global Environmental Change, Disasters and Security – Threats, Challenges, Vulnerabilities and Risks* (Berlin et al.: Springer-Verlag): 31-60.

The complex linkages between nature and humans depend on healthy ecosystem services.²⁴ In its *provisioning* functions they offer fresh water, air, food, wood, fuel and fibre, and they regulate the climate, purify water and air, and control floods and storms; in its *supporting* functions they offer nutrients and waste management for the soil, the disintegration, processing and detoxifying of hazardous components, and finally they guarantee the cultural heritage and non-material benefits for recreation. This complexity influences the material minimum for human and ecosystem survival, social relations, freedom and choice, and thus also human security. The policy agenda has evolved from poverty alleviation, diverse development paradigms, sustainability (Brundtland Commission) to financial, physical, human, societal, political and cultural capitals and to sectoral security issues that affect human security.²⁵

1. *Water security* refers to “water resources and the related ecosystems that provide and sustain the vital liquid [that] are under threat from pollution, unsustainable use, land-use changes, climate change and many other forces... ensuring that freshwater, coastal and related ecosystems are protected and improved; that sustainable development and political stability are promoted, that every person has access to enough safe water at an affordable cost to lead a healthy and productive life and that the vulnerable are protected from the risks of water-related hazards.”²⁶ (Second World Water Forum in The Hague 2000).
2. *Soil security* can be analysed from state- and human-centred perspectives. According to a study for UNCCD (2009): “Soil security is achieved when efforts succeed to conserve soil fertility, contain land degradation and combat desertification and when the consequences of drought are reduced by improving livelihood and human wellbeing of the people ... Soil insecurity challenges basic ecosystem services, especially water as well as food production and supply.”²⁷
3. *Food security* is understood by FAO as “when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life”. Via Campesina referred to food sovereignty as “the right of peoples, communities, and countries to define their own agricultural, labour, fishing, food and land policies, which are ecologically, socially, economically and culturally appropriate to their unique circumstances. It includes the true right to food and to produce food, which means that all people have the right to safe,

²⁴ MA, 2005: *Ecosystems and Human Well-Being: Synthesis* (Washington DC: Island Press); at: <<http://www.millenniumassessment.org/documents/document.300.aspx.pdf>>; Rik Leemans, 2009: “The Millennium Ecosystem Assessment: Securing Interactions between Ecosystems, Ecosystem Services and Human Well-being”, in: H. G. Brauch et al. (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin et al.: Springer-Verlag): 53-61; Rik Leemans, Martin Rice, Ann Henderson-Sellers and Kevin Noone, 2011: “Research Agenda and Policy Input of the Earth System Science Partnership for Coping with Global Environmental Change”, in: H.G. Brauch et al. (Eds.), 2011: *Coping with Global Environmental Change, Disasters and Security – Threats, Challenges, Vulnerabilities and Risks* (Berlin et al.: Springer-Verlag): 1205-1220.

²⁵ Brundtland Commission (World Commission on Environment and Development), 1987: *Our Common Future. The World Commission on Environment and Development* (Oxford – New York: Oxford University Press); Amartya Sen, 1999, 2000: *Development as Freedom* (New York: Knopf – Oxford: Oxford University Press).

²⁶ For a recent review on efforts to define water security, see: Ursula Oswald Spring; Hans Günter Brauch, 2009: “Securitizing Water”, in: H. G. Brauch et al. (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts*. Hexagon Series on Human and Environmental Security and Peace, vol. 4 (Berlin – Heidelberg – New York: Springer-Verlag): 175-202.

²⁷ Hans Günter Brauch; Úrsula Oswald Spring, 2009: *Securitizing the Ground. Grounding Security* (Bonn: UNCCD); Hans Günter Brauch; Úrsula Oswald Spring, 2011: “Securitizing Land Degradation and Desertification: A Proactive Soil Security Concept”, in: H.G. Brauch et al. (Eds.), 2011: *Coping with Global Environmental Change, Disasters and Security – Threats, Challenges, Vulnerabilities and Risks* (Berlin et al.: Springer-Verlag): 803-834.

nutritious and culturally appropriate food and to food producing resources and the ability to sustain themselves and their societies”.²⁸

4. Unsafe food and water, or the lack of them, affect *health security*.²⁹ While the World Health Organization uses a state-centred understanding of health security related to epidemics, bioterrorism and prevention³⁰, the position of some academics and many Southern countries is more community-centred, and their approach integrates efforts from the bottom up.³¹ This second approach focuses, from a human security perspective, on the interrelationship between human health and environmental services as important health providers, and expresses the crucial relationship between water, food and health security.³² These two approaches justify investment in health where the limited financial resources in poorer countries cannot provide an integrated health care system, but where *environmental* and especially *water security* may play a crucial role for maintaining and recovering human health.³³
5. The integration of these sectoral security perspectives helps address *livelihood security*, starting with poverty-focused and integrated rural development activities. From a human security approach, by putting people in the centre livelihood security treats the poor and vulnerable as active participants, with a policy agenda focusing on development and structural inequity. A sustainable and dynamic understanding of livelihood focuses on agency, assets and wide-ranging repertoires. Livelihood security is therefore closely related to water, food and health security, where highly vulnerable groups are exposed to

²⁸ FAO, 2002: *The State of Food Insecurity in the World 2001* (Rome: FAO); FAO, 2004: *The State of Food Insecurity of the World 2004* (Rome: FAO); FAO, 2006: *The State of Food Insecurity in the World 2006. Eradicating world hunger- taking stock ten years after the World Food Summit* (Rome: FAO); Úrsula Oswald Spring, 2009a: “Food as a new human and livelihood security issue”, in: H.G. Brauch (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin – Heidelberg – New York: Springer-Verlag): 471-500; on food sovereignty, see: *Food Sovereignty: A Right For All*, Political Statement of the NGO/CSO Forum for Food Sovereignty, Rome, June 2002, at: <<http://www.poptel.org.uk/panap/latest/wfs7.htm>>.

²⁹ Ursula Oswald Spring, 2011: “Towards a sustainable health policy in the Anthropocene”, in: *IHDP Update, Human Health and Global Environmental Change*, 2011, no. 1: 19-25; at: <<http://www.ihdp.unu.edu/file/get/7923>>.

³⁰ WHO, 1999: *The World Health Report 1999, Making a Difference* (Geneva: WHO); WHO, 2001: “Global Health Security Initiative” (Geneva: WHO): at: <<http://www.ghsi.ca.english/index.asp>>; WHO, 2002: *Global crisis – global solutions. Managing public health emergencies of international concern through the revised International Health Regulations*, Document WHO/CDS/CSR/GAR/2002.4 (Geneva: World Health Organization); Guénaél Rodier; Mary Kay Kindhauser, 2009; “Health and Human Security in the 21st Century”, in: H.G. Brauch (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin – Heidelberg – New York: Springer-Verlag): 531-542.

³¹ Jennifer Leaning, 2009: “Health and Human Security in the 21st Century”, in: H.G. Brauch (Eds.): *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin – Heidelberg – New York: Springer-Verlag): 541-552; Isabel Fischer; Mohammad Musfequs Salehin, 2009: “Health and Poverty as Challenges for Human Security: Two Case Studies on Northern Vietnam and Bangladesh”, in: *Facing Global Environmental Change*, op. cit.; 567-576.

³² Juana Enriqueta Cortés Muñoz and César Guillermo Calderón Mólgora, 2011: “Potable Water Use from Aquifers Connected to Irrigation of Residual Water”, in: Úrsula Oswald Spring (Ed.): *Water Resources in Mexico* (Berlin – Heidelberg – New York: Springer-Verlag, 2011, *forthcoming*): 189-200; Francisco Javier Avelar González, Elsa Marcela Ramírez López, Ma. Consolación Martínez Saldaña, Alma Lilián Guerrero Barrera, Fernando Jaramillo Juárez and José Luis Reyes Sánchez, 2011: “Water Quality in the State of Aguascalientes and its Effects on the Population’s Health”, in: Úrsula Oswald Spring (Ed.): *Water Resources in Mexico*, op.cit, 2011, *forthcoming*): 217- 229.

³³ Anne M. Hansen and Carlos Corzo Juárez, 2011: “Evaluation of the Pollution of Hydrological River Basins: Priorities and Needs”, in: Úrsula Oswald Spring (Ed.): *Water Resources in Mexico*, op.cit, 2011, *forthcoming*): 201-215.

human insecurity due to external and internal pressures and to the existing entitlement base in land rights, as well as problems of access to productive tools, inheritance, etc.³⁴

Climate change will exacerbate these sectoral security problems if the communities and organized social groups fail to create mitigation and adaptation strategies with resilience-building, learning from past extreme events through preventive learning, and investment and policy decisions.

8. Human Security Perspectives on Water and Soil Security

For many developing countries water scarcity, degradation, pollution and stress has already and will increasingly become a severe threat to human security and survival as a result of the rapidly growing demand caused by population growth, further aggravated in some parts of the world due to the impact of climate change. Soil erosion, degradation and desertification have already become severe challenges for human survival and both have become major push factors that are responsible for internal displacements and human migration.

The control of and access to scarce water has been a cause of many internal conflicts but it is disputed whether it has led or may lead to violent conflicts (“water wars”) in the future.³⁵ In many cases water scarcity in international river basins has resulted in water cooperation.³⁶

³⁴ Hans-Georg Bohle, 2009: “Sustainable Livelihood Security. Evolution and Application”, in: H. G. Brauch et al. (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin – Heidelberg – New York: Springer-Verlag): 521-528.

³⁵ Peter H. Gleick, 1993: “Water and Conflict: Fresh Water Resources and International Security”, in: *International Security*, 18,1 (Summer): 79-112; Peter H. Gleick, 1994: “Water, war and peace in the Middle East”, in: *Environment*, 36,3: 6-15; Peter H. Gleick, 1998: “Water and conflict”, in: Peter H. Gleick (Ed.): *The World’s Water 1998-99: The Biannual Report on Fresh Water Resources* (Washington, DC – Covelo, CA: Island Press): 105-135; Peter H. Gleick, 1998: “Water scarcity and conflict”, in: Alan Dupont (Ed.) *The Environment and Security: What are the Linkages?* Canberra Papers on Strategy and Defence, No. 125 (Canberra: Australian National University): 35-43; Peter H. Gleick, 2008: “Water Conflict Chronology”; at: <<http://www.worldwater.org/conflictchronology.pdf>>; Aaron T. Wolf, 1997: “International Water Conflict Resolution: Lessons from Comparative Analysis”, in: *International Journal of Water Resources Development*, 13,3 (September): 333-365; Aaron T. Wolf, 1998: “Conflict and cooperation along international waterways”, in: *Water Policy*, 1, 2: 251-265, at: <http://www.transboundarywaters.orst.edu/publications/conflict_coop/> (14 September 2005); Aaron T. Wolf, 1999: “‘Water Wars’ and Water Reality: Conflict and Cooperation along International Waterways”, in: Steve Lonergan (Ed.): *Environmental Change, Adaption, and Security* (Dordrecht: Kluwer): 251–265; Aaron T. Wolf, 1999b: “The Transboundary Freshwater Dispute Database”, in: *Water International*, 24,2 (spring): 29-60; Aaron T. Wolf, 2001a: “Water and Human Security”, in: Bennett, Lynne Lewis (Ed.): *Complexities with Transboundary Water Resource Management: Progress and Stumbling Blocks*, Universities Council on Water Resources, Issue No. 118, January; Aaron T. Wolf (Ed.), 2002: *Conflict Prevention and Resolution in Water Systems* (Cheltenham – Northampton, MA: Edward Elgar).

³⁶ Peter Ashton; Anthony Turton, 2009: “Water and Security in Sub-Saharan Africa: Emerging Concepts and their Implications for Effective Water Resource Management in the Southern African Region“, in: Brauch H. G. et al. (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin et al.): 661-674; Maëlis Borghese, 2009: “The Centrality of Water Regime Formation for Water Security in West Africa: An Analysis of the Volta Basin”, in: Brauch H. G. et al. (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin et al.: Springer-Verlag): 685-698; Stefan Lindemann, 2009: “Success and Failure in International River Basin Management – The Case of Southern Africa”, in: Brauch H. G. et al. (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin et al.: Springer-Verlag): 699-710; Bastien Affeltranger, 2009: “Sustainability of Environmental Regimes: The Mekong River Commission”, in: Brauch H. et al. (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin et al.: Springer-Verlag): 593-601; Martin Kipping, 2009a: “Can ‘Integrated Water Resources Management’ Silence Malthusian Concerns? The Case of Central Asia”, in: H. G. Brauch et al. (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin et al.: Springer-Verlag): 711-723.

This is why the international community has sponsored the emergence of International River Basin Regimes, such as the Nile Basin Commission.³⁷ While the construction of dams to enhance international water cooperation has in most cases contributed to “water peace”, in at least one case it has resulted in a bilateral war between two countries in Africa.³⁸ “Virtual water” as export of food can relieve conflicts over scarce water as long as the population can afford these food imports.³⁹ With rapidly growing food prices, in many developing countries many poor people cannot afford the rapidly growing food costs, and this has resulted in many parts of the world in food riots since 2008.⁴⁰

From a human security perspective, water security issues require a complex analysis that combines knowledge of both the natural and social sciences. Such a holistic approach to water security issues may create synergies and cost savings compared with business-as-usual approaches. Achieving water security through “the reliable availability of an acceptable quantity and quality of water for health, livelihoods and production, coupled with an acceptable level of water-related risks” requires “the need to consider issues of enhancing sustainability and environmental integrity and reducing the vulnerabilities that so many people face. Equity is also a core concept, so that the needs of *all* users and value and potentials of *all* uses of water resources are recognized in decisions over their future”.⁴¹

The key policy goal should be enhancing environmental and water cooperation through “environmental peacemaking”⁴² and “hydro-diplomacy”⁴³ in order to resolve unavoidable water disputes peacefully, thus preventing an escalation of these water conflicts into water wars. Achieving ‘water security’ at home and maintaining a ‘water peace’ with neighbouring

³⁷ Patricia Kameri-Mbote; Kithure Kindiki, 2009: “Water and Food Security in the Nile River Basin: Perspectives of Governments and NGOs of Upstream Countries“, in: H. G. Brauch (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin et al.: Springer-Verlag): 651-659; Emad Adly; Tarek Ahmed, 2009: “Water and Food Security in the River Nile Basin: Perspectives of the Government and NGOs in Egypt“, in: H.G. Brauch (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin et al.: Springer-Verlag): 641-649.

³⁸ Martin Kipping, 2009: “Water Security in the Senegal River Basin: Water Cooperation and Water Conflicts”, in: H. G. Brauch (Eds.): *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin – Heidelberg – New York: Springer-Verlag): 675-684.

³⁹ John Anthony J. Allan, 1997: “Virtual Water: A Long-term Solution for Water Short Middle Eastern Economies?” Paper for the British Association Festival of Science, University of Leeds, UK, 9 September; John Anthony J. Allan, 2000, 2001: *The Middle East Water Question. Hydropolitics and the Global Economy* (London – New York: IB Tauris); John Anthony J. Allan, 2003: “Water Security in the Mediterranean and the Middle East”, in: Hans Günter Brauch; P.H Liotta; Antonio Marquina; Paul Rogers; Mohammed El-Sayed Selim (Eds.): *Security and Environment in the Mediterranean. Conceptualising Security and Environmental Conflicts* (Berlin et al.: Springer 2003): 705-717; Allan John Anthony J. Allan, 2003: “Virtual water - the water, food, and trade nexus: useful concept or misleading metaphor?”, in: *Water International*, 28,1 (March): 4-11.

⁴⁰ On the food riots in North Africa since January 2011; at: <<http://www.energybulletin.net/stories/2011-01-11/food-riots-jan-11>>; “Bread and protests: the return of high food prices“, in: IISS (Ed.): *Strategic Comments*, vol. 17, comment 9, March 2011; at: <<http://www.iiss.org/publications/strategic-comments/past-issues/volume-17-2011/march/bread-and-protests-the-return-of-high-food-prices/>>.

⁴¹ David Grey; Claudia W. Sadoff, 2007: “Sink or Swim? Water Security as a Key to Unlocking Growth”, at: <<http://www.dwaf.gov.za/Masibambane/documents/watergrowth/WaterSecurityMay07.pdf>>; John Soussan; Rachel Harrison, 2000: *Commitments on Water Security in the 21st Century. An Analysis of Pledges and Statements made at the Ministerial Conference and World Water Forum, The Hague, March 2000* (Leeds: University of Leeds, School of Geography, The Centre for Water Policy and Development).

⁴² Ken Conca; Geoffrey D. Dabelko (Eds.), 2002: *Environmental Peacemaking* (Baltimore: Johns Hopkins University Press – Woodrow Wilson Center Press).

⁴³ Úrsula Oswald Spring, 2007: “Hydro-Diplomacy: Opportunities for Learning from an Interregional Process”, in: Clive Lipchin; Eric Pellant; Danielle Saranga; Allyson Amster (Eds.): *Integrated Water Resources Management and Security in the Middle East* (Dordrecht: Springer): 163-200.

states in shared river basins can be achieved by combining *top-down* policies related to water management, water laws, resolution of the many domestic water conflicts at home, and use of hydro-diplomacy for resolving intra-state water conflicts, with *bottom-up* societal initiatives aiming at water conservation, water harvesting, and improved sanitation at the household, community, and village or city level. Different scenarios require that developing countries promote sustainable water management to deal with both population growth and declining water availability caused by climate change, without ignoring the water needs of ecosystem management and future generations. To improve regional water security for all social groups and above all for vulnerable people, international and national plans must be developed in cooperation with local authorities and organized citizens.⁴⁴

While ‘territorial security’ points to the traditional national security concept, the new ‘soil security’ concept applies primarily to the economic, environmental and societal dimensions of security. The concept of ‘soil security’ refers to ‘ecosystem’ or ‘environmental services’ offered by the land and contrasts with the traditional narrow ‘territorial security’ as a feature of national sovereignty. The concept of soil security also includes those services that are provided by the ‘land’, namely through the interaction between the biota, within and on the soil, and the soil and the atmosphere.⁴⁵

‘Soil security’ can be analysed from both the human and state-centred perspectives of local, national, regional and international security. The ‘soil security’ concept claims that land degradation and desertification processes relate to a lack of precipitation during periods of drought, and that the exhaustion of groundwater reserves severely challenges people’s livelihood and often obliges them to migrate to urban centres within their country or abroad. ‘Soil security’ is threatened by a) the degradation of soils and related fertility and biodiversity losses due to the processes of geophysical, wind and water erosion, and b) drought resulting in the bad harvests and declines in crop yield that have often triggered severe and extended periods of famine in developing countries that have affected several hundred millions of people in the 20th century, and caused thousands of deaths.

‘Soil insecurity’ challenges basic ecosystem services, especially due to land degradation, but also due to drought and inadequate food production and supply, especially for the poor and marginalized population that cannot afford to purchase food. Since 2008, drastic food price rises have increased the number of hungry people, the increase reaching 100 million in 2009; in the same year, one billion people were hungry in countries lacking financial resources and agricultural policy to meet the food demand of their growing population or the capacity to effectively distribute food aid to the people most in need of it and affected by famine.⁴⁶

‘Securitizing the land as soil’ requires that policymakers in both national governments and in international organizations, programmes and environmental regimes, networks and know-

⁴⁴ This paragraph is based on: Ursula Oswald Spring; Hans Günter Brauch, 2009: “Securitizing Water”, in: H. G. Brauch et al. (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts*. Hexagon Series on Human and Environmental Security and Peace, vol. 4 (Berlin – Heidelberg – New York: Springer-Verlag): 175-202.

⁴⁵ This paragraph is based on: Hans Günter Brauch; Úrsula Oswald Spring, 2011: “Securitizing Land Degradation and Desertification: A Proactive Soil Security Concept“, in: H.G. Brauch et al. (Eds.), 2011: *Coping with Global Environmental Change, Disasters and Security – Threats, Challenges, Vulnerabilities and Risks* (Berlin et al.: Springer-Verlag): 803-834.

⁴⁶ IFPRI [International Food Policy Research Institute], 2007: *The Challenge of Hunger 2007. Global Hunger Index: Facts, determinants, and trends. Measures being taken to reduce acute undernourishment and chronic hunger* (Bonn: Welthungerhilfe, October 2007); at: < <http://www.ifpri.org/media/20071012ghi/ghi07.pdf>>. FAO 2009: *The State of Food Security in the World. Economic Crises – Impacts and Lessons Learned* (Rome: FAO), at: <<ftp://ftp.fao.org/docrep/fao/012/i0876e/i0876e.pdf>> (16 March 2010).

ledge-based epistemic communities⁴⁷ succeed in upgrading land issues from environmental, societal, economic and food issues to problems of the ‘utmost importance’ at the highest political level, requiring ‘extraordinary measures’⁴⁸ to face their societal and political impacts and cope with their natural and anthropogenic causes.

In the early 21st century, land degradation and desertification as well as famine and distress migration have been perceived as human security threats by the *Commission on Human Security* (CHS).⁴⁹ Drought and famine have been seen as challenges to food security by FAO, the WFP and IFAD, as well as to health security by WHO. Desertification is increasingly being recognized as a critical environmental and human security challenge by academic experts and by many UN organizations, but not yet by all governments.

From a human security perspective achieving soil security may be enhanced by ten conceptual proposals for coping with land degradation and desertification⁵⁰:

1. *Partnership building measures* (PBMs)⁵¹ as political measures in the economic and ecological realm may have a positive impact on the societal and cultural level and should aim at:
 - creating awareness of these challenges among decision-makers and the public;
 - analysing in detail the complex interrelationships between the factors of the environmental and human quartet;
 - initiating regional climate impact studies and mitigation strategies that counter land degradation and desertification.

The global and regional challenges should lead to more active policies of co-operation on sustainable development in agriculture, industry, tourism and transport. In the medium-term, PBMs could become important instruments of preventive diplomacy and of a post-conflict peace-building in other areas of the globe with violent conflicts.

2. One example for a *partnership building project* (PBP) to mitigate several impacts of land degradation and desertification could be a ‘survival pact’ that links ‘virtual water’ (food exports) with ‘virtual sun’ (renewable energy exports) based on a longer-term interdependence. Linking both commodities that are crucial for life: cereals and energy

⁴⁷ Peter M. Haas, 1992: “Epistemic Communities and International Policy Co-ordination”, in: *International Organization*, 46 (Winter): 1-36; Peter M. Haas, 1994: “Do regimes matter? Epistemic communities and Mediterranean pollution control”, in: Friedrich Kratochwil; Edward D. Mansfield (Eds.): *International Organization: A Reader* (New York: HarperCollins).

⁴⁸ Ole Wæver, 1995: “Securitization and Desecuritization”, in: Lipschutz, Ronnie D. (Ed.): *On Security* (New York: Columbia University Press): 46-86; Ole Wæver, 1997: *Concepts of Security* (Copenhagen: Department of Political Science); Ole Wæver, 2008: “Peace and Security: Two Evolving Concepts and their Changing Relationship”, in: H. G. Brauch et al. (Eds.): *Globalization and Environmental Challenges: Reconceptualizing Security in the 21st Century* (Berlin et al.: Springer-Verlag): 99-111; Barry Buzan; Ole Wæver; Jaap de Wilde, 1997, 1998, ²2004: *Security. A New Framework for Analysis* (Boulder – London: Lynne Rienner).

⁴⁹ CHS [Commission on Human Security], 2003, 2005: *Human Security Now, Protecting and empowering people* (New York: Commission on Human Security); at: <<http://www.humansecurity-chs.org/finalreport/>>.

⁵⁰ This paragraph is based on: Hans Günter Brauch; Úrsula Oswald Spring, 2011: “Securitizing Land Degradation and Desertification: A Proactive Soil Security Concept”, in: H.G. Brauch et al. (Eds.), 2011: *Coping with Global Environmental Change, Disasters and Security –Threats, Challenges, Vulnerabilities and Risks* (Berlin et al.: Springer-Verlag): 803-834.

⁵¹ This concept was introduced and defined in: Hans Günter Brauch, 1994: “Partnership Building Measures for Conflict Prevention in the Western Mediterranean”, in: Antonio Marquina; Hans Günter Brauch (Eds.): *Confidence Building and Partnership in the Western Mediterranean: Tasks for Preventive Diplomacy and Conflict Avoidance* (Madrid: UNISCI - Mosbach: AFES-PRESS): 257-324; Hans Günter Brauch, 2000: “Partnership Building Measures to Deal with Long-term Non-military Challenges Affecting North-South Security Relations”, in: Hans Günter Brauch; Antonio Marquina; Abdelwahab Biad (Eds.), 2000: *Euro-Mediterranean Partnership for the 21st Century* (London: Macmillan – New York: St. Martin’s Press): 281-318.

requires a high degree of trust and predictability. Such a ‘survival pact’ could start now with the training of experts for the respective countries in the area of renewable energy (solar and wind power), but above all must involve the people that own the land, thus increasing their income from exporting renewable energy.⁵²

3. The fight against desertification is the task of the parties of UNCCD and of the development programmes of many countries. Sustainable agriculture and food security are a concern of FAO, of the World Bank, of development agencies and of governments.
4. Urbanization and urban pollution are the new threats for the majority of the population.
5. These goals require a longer-term strategy of implementation in a multilateral cooperative framework. The societal impacts of climate change, land degradation and desertification may trigger conflicts that can be negotiated peacefully but they may also escalate into violent clashes. But the price for not acting now may be human catastrophes for the victims of climate change and environmental stress.⁵³
6. The consequences of distress migrants from Central America will impact first on Mexico, and these environmental migrants will certainly have implications for the USA and Canada. Droughts in the Sahel countries will impact on North African countries first and later also on Europe.
7. Active and efficient implementation of climate policies and of measures to cope with land degradation and desertification could become the best security strategy for preventing environmental conflicts from occurring and for contributing to a ‘sustainable peace’ that combines non-violent conflict resolution, equitable economic relationships and sustainable policies in the North and South.⁵⁴
8. Long-term-oriented proactive policies of sustainable development combating desertification require functional cooperation and non-agricultural employment in rural areas.⁵⁵
9. These initiatives may become the most effective policy of conflict prevention that will enhance both human and societal security in the affected regions, but they may also reduce the costs of coping with the consequences of the missed opportunities that exist for multilateral cooperative policies in the early 21st century.
10. All these measures should enhance water, soil and food security and so will also improve the health security of the people most affected by land degradation and desertification. By

⁵² This idea was first developed in: Hans Günter Brauch, 2002: “A Survival Pact for the Mediterranean: Linking ‘virtual water’ and ‘virtual sun’”, in: R.K. Pachauri; Gurneeta Vasudeva (Eds.): *Johannesburg and beyond. Towards concrete action. Proceedings of the Colloquium held on 24 March 2002 in New York, U.S.A.* (New Delhi: Teri, 2002): 151-190; and developed further in: Hans Günter Brauch, 2010: *Climate Change and Mediterranean Security - International, National, Environmental and Human Security Impacts for the Euro-Mediterranean Region during the 21st Century: Proposals and Perspectives*. Papers IEMed 9 (Barcelona: IEMed).

⁵³ Nicholas Stern, 2006, 2007, ⁴2008: *The Economics of Climate Change – The Stern Review* (Cambridge – New York: Cambridge University Press).

⁵⁴ Hans Günter Brauch; Ursula Oswald Spring, 2009: “Towards Sustainable Peace in the 21st Century”, in: H.G. Brauch et al. (Eds.): *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin et al.: Springer-Verlag): 1295-1310; Ursula Oswald Spring; Hans Günter Brauch, 2011: “Coping with Global Environmental Change – Sustainability Revolution and Sustainable Peace“, in: H. G. Brauch et al. (Eds.): *Coping with Global Environmental Change, Disasters and Security – Threats, Challenges, Vulnerabilities and Risks* (Berlin et al.: Springer-Verlag): 1487-1503.

⁵⁵ Hans Günter Brauch, 2011: “Policy Responses to Climate Change in the Mediterranean and in the Middle East and North Africa in the Anthropocene”, in: Jürgen Scheffran; Michael Brzoska; Hans Günter Brauch; Peter Michael Link; Janpeter Schilling (Eds.): *Climate Change, Human Security and Violent Conflict: Challenges for Societal Stability* (Berlin – Heidelberg – New York: Springer-Verlag, 2011) *forthcoming*.

forward-looking multidisciplinary and policy-relevant research, anticipatory learning and proactive policies, many of the extreme and potentially violent outcomes of GEC and land degradation and desertification may be avoided.

9. Human Security Responses to Security Dangers Posed by Global Environmental Change Impacts

What policy responses are needed to achieve human security as “Freedom from Hazard Impact” in the new period of earth history called the “Anthropocene”?⁵⁶

“Dangerous climate change” may become a direct human and international security threat during the 21st century, if the adopted goal of a stabilization of the increase of global average temperature of 2°C above pre-industrial levels is not achieved.⁵⁷ If the projected linear effects of anthropogenic climate change should cross a certain threshold and trigger major “tipping points in the climate system”, such as the shut-off of the Gulf Stream in the North Atlantic, the melting of the glaciers in the Andes and in the Himalayas, or its impact on the Indian Monsoon, its geopolitical impacts may be far more extreme than the cascading effects that were triggered by the earthquake that hit Japan on 11 March 2011. The industrialized countries are not immune to its consequences, as shown by the heatwave of August 2003 that caused between 35,000 and 75,000 deaths, or the forest fires that hit Russia in the summer of 2010 with more than 50,000 deaths, the severe floods in Australia in the fall of 2010, or the Hurricanes Mitch of 1988 and Katrina of 2005 that caused the death of nearly 2000 people in the US.⁵⁸

10. Strategies for Addressing and Coping with Environmental Threats to Human Security

The cascading effects of a devastating earthquake and tsunami and the subsequent major nuclear catastrophe in Japan on 11 March 2011 were not considered as probable by many scientists, government disaster response agencies and international organizations. This tragic experience has stressed the need to develop the UN International Strategy on Disaster Reduction (UNISDR) further beyond the *Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters* (HFA)⁵⁹ in order to address the coping capacities for complex emergencies, when a hazard impacts on a violent conflict – as in the case of the tsunami of 26 December 2004 on Sri Lanka and Aceh in Indonesia –, or when

⁵⁶ This concept was first coined by Paul J. Crutzen; Eugene F. Stoermer, 2000: “The Anthropocene”, in: *IGBP Newsletter*, 41: 17-18; Paul J. Crutzen, 2002: “Geology of Mankind”, in: *Nature*, 415,3 (January): 23; Paul J. Crutzen, 2006: “The Anthropocene”, in: Ehlers, Eckart; Krafft, Thomas (Eds.): *Earth System Science in the Anthropocene* (Berlin – Heidelberg – New York: Springer): 13-18; Paul J. Crutzen, 2011: “The Anthropocene: Geology by Mankind”, in: H.G. Brauch et al. (Eds.), 2011: *Coping with Global Environmental Change, Disasters and Security – Threats, Challenges, Vulnerabilities and Risks* (Berlin et al.: Springer-Verlag): 3-4.

⁵⁷ Hans Joachim Schellnhuber; Wolfgang Cramer; Nebojsa Nakicenovic; Tom Wigley; Gary Yohe (Eds.), 2006: *Avoiding Dangerous Climate Change* (Cambridge: Cambridge University Press).

⁵⁸ See EMDAT database; at: <<http://www.emdat.be/>>; MunichRe, 2005: “Annual Review”, in: *Natural Catastrophes 2004* (München: Münchner Rückversicherung): 1-56; MunichRe, 2006: *Topics: Natural Disasters. Annual Review of Natural Disasters 2005* (Munich: Munich Reinsurance Group); MunichRe, 2007: *Topics Geo - Natural Catastrophes 2006 Analyses, assessments, positions* (München: MunichRe); MunichRe, 2011: *Topics Geo - Natural Catastrophes 2010 Analyses, assessments, positions* (München: MunichRe); at: <www.Munichre.com>.

⁵⁹ See at: <<http://www.unisdr.org/eng/hfa/hfa.htm>>.

other possible cascading effects of complex hazards or even tipping points⁶⁰ in the climate system may occur in the future, in order to protect the people.

From a human security perspective, “Freedom from Hazard Impacts” requires addressing the consequences not only for the human security of human beings and communities, but also their water, soil, food, health and livelihood security. This means addressing the cross-cutting problems from multidisciplinary scientific perspectives. From a political vantage point, the holistic coping strategy needed requires a horizontal coordination of the strategies, policies and measures of government ministries and of international organizations, even though they may be sub-optimal.⁶¹

The most efficient human security strategy for achieving the fourth environmental pillar of human security as “Freedom from Hazard Impact” would be the full implementation of the goal the G8 countries have adopted repeatedly since 2007 of reducing GHG by 50% globally, or by 80% for the ANNEX-I or OECD countries, by 2050. However, humankind experienced at COP 15 and 16 in Copenhagen and Cancun a lack of political urgency and will and an absence of national political capability to implement the measures needed to achieve a 2% reduction of GHG each year between 2010 and 2050.

Even if this goal should be achieved, the extreme weather events (droughts, heatwaves, forest fires, as well as storms, floods and landslides) may increase significantly and no scientist will be able to predict nor can any government prevent unforeseen cascading effects triggered by climate change and its physical and societal impacts. “Freedom from Hazard Impact” requires a proactive environmental strategy, ambitious policies and measures for implementing the three Rio Conventions on climate change (UNFCCC of 1992), biodiversity (CBD of 1992) and desertification (UNCD of 1994).

Although the Secretary-General did not refer specifically to human security, he proposed in his report on “Climate change and its possible security implications”

several ‘threat minimizers’, ... [to] lower the risk of climate-related insecurity. These include climate mitigation and adaptation, economic development, democratic governance and strong local and national institutions, international cooperation, preventive diplomacy and mediation, timely availability of information and increased support for research and analysis to improve the understanding of linkages between climate change and security. Accelerated action at all levels is needed to bolster these threat minimizers.⁶²

These measures if they should be approved at COP 17 in Durban could enhance the human security of the people affected most by and most vulnerable to the effects of climate change. In his view the central role would have to be achieved by a strategy of sustainable development in “enhancing adaptive capacity and as the overarching framework to address existing vulnerabilities which may be exacerbated by climate change”. From a human security perspective ‘sustainable development’ must be developed further towards a fourth ‘sustainability revolution’. Wilson’s consilience requires a shift to holistic concerns linking research and action on Earth and Human Systems.⁶³

⁶⁰ Timothy Lenton; Hermann Held; Elmar Kriegler; Jim W. Hall; Wolfgang Lucht; Stefan Ramstorf; Hans Joachim Schellnhuber, 2008: “Tipping elements in the Earth’s climate system”, in: *Proceedings of the National Academy of Science* (PNAS), 105,6 (12 February): 1786-1793.

⁶¹ Fritz W. Scharpf, 2001: “Notes Toward a Theory of Multilevel Governing in Europe”, in: *Scandinavian Political Studies*, 24, 1-26.

⁶² UN General Assembly: *Climate change and its possible security implications: Report of the Secretary-General*, 11 September 2009, A/64/350, at: <<http://www.unhcr.org/refworld/docid/4ad5e6380.html>>

⁶³ Edward O. Wilson, 1998a: *Consilience* (New York: Knopf); Edward O. Wilson, 1998: “Integrated science and the coming century of the Environment”. in: *Science*, 279: 2048-2049.

Changes in the Earth System and the inescapable consequences put humankind in a predicament: we know that our actions put our survival at risk but due to short-term profit thinking we do not seem to have to change our behaviour and to avert the destruction of our planet. Even if the survival of the present generation is probably not at stake, that of future generations will be. This should be sufficient motive for a radical cultural change in all the spheres of production, circulation, and consumption processes. This requires that we all must act now and avoid postponing needed decisions to the next generation to cope then with more severe challenges and more costly impacts of global environmental change.⁶⁴

The combination of these factors has already created a high uncertainty for human security. The present daily survival problems of five billion people, their increased social vulnerability and physical exposure to climate change are creating not only additional dangers for HS, but also challenges for an integrated human security approach that combines all four pillars, where fundamental individual and social human rights must be realized as part of global equity, where countries with better assets are ethically obliged to support weaker ones, as the impacts of climate change are increased by greenhouse gas emissions in industrialized and threshold countries.

From a human security perspective “Freedom from Hazard Impacts” implies a close cooperation between those agencies working on the complex global environmental agenda and on the hazard agenda. This should take into account the less likely cascading effects triggered by both geophysical as well as hydro-meteorological climate-related events that could create a major food crisis if a severe and long drought should be followed by intensive and lasting floods, and if this combination should destroy the harvests simultaneously in different grain-exporting countries, e.g. in North America, Europe and Australia.

The resulting rapidly rising food scarcities and predictable rise in food prices would hit the poorest countries most, and within these the poorest segment of the society would be affected most. This could result in food riots that could trigger major political unrest in the most affected developing countries, as has occurred since January 2011 in the Arab world, where such problems have contributed to wide discontent in many countries.

It may be the appropriate time for the United Nations General Assembly to consider adding to the first three pillars of Human Security as

- “Freedom from Fear” referring to the policy agenda of peacekeeping, peace-building humanitarian law and disarmament;
- “Freedom from Want” referring to the policy agenda of human and sustainable development;
- “Freedom to live in Dignity” referring to the policy agenda of human rights, democratic governance and rule of law;

a fourth pillar as

- “Freedom from Hazard Impacts” that brings in the policy agendas dealing with global environmental issues as well as natural hazards and disasters (early warning, disaster response, disaster preparedness, resilience building and reduction of social vulnerability).

This widening of the human security concept (tables 1,2,4,5) would reflect the preferences of many nations states they expressed at the UN GA debate on human security on 22 May 2008 (table 3) as well as the policy agendas of the Human Security Network (table 6,7) and of the Friends of Human Security.

⁶⁴ Ursula Oswald Spring; Hans Günter Brauch, 2011: “Coping with Global Environmental Change – Sustainability Revolution and Sustainable Peace“, in: H. G. Brauch et al. (Eds.): *Coping with Global Environmental Change, Disasters and Security* (Berlin et al.: Springer-Verlag): 1503.

Appendix

The following tables 1-5 are taken from: Hans Günter Brauch: “Human Security Concepts in Policy and Science“, in: H. G. Brauch et al. (Eds.): *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin et al.: Springer-Verlag, 2009): 965-990. Tables 6 and 7 are taken from: Claudia F. Fuentes Julio, Hans Günter Brauch, 2009: “The Human Security Network: A Global North-South Coalition”, in: H. G. Brauch et al. (Eds.), 2009: *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Berlin et al.: Springer-Verlag): 991-1002. The author appreciates the permission of Springer Publishers to reproduce this copyrighted material in this paper.

Table 1: Contextualizing human security concepts, pillars and policy agendas.
Source: Brauch (2009: 967).

<u>Security dimension</u> ⇒ (widening) Level of interaction ↓↓ (deepening)	Referent object (security for whom)	Military	Political	Economic	Societal	Environmental
Global security	World of states	Primary focus of the <i>Copenhagen School</i> <i>(securitization: a ‘move’ to put policy issues of utmost importance that require extraordinary measures on the agenda of the state or of international governmental organizations (IGOs))</i> <i>Securitizing actors: states and societal bodies (e.g. IPCC)</i>				
International/Regional						
National security						
Village/Community/Society	Human-kind	Sectoral security concepts cut across dimensions and referent objects. ◀ Energy, water, food, health, livelihood security ▶				
Human security (sectorialization)						
- Four pillars	peoples	Freedom to live in dignity				
	people	Freedom from fear	Freedom from want		Freedom from hazard impacts	
		<i>protection</i>		<i>empowerment</i>		
- Policy agendas	community	- Humanitarian law	- Human rights	- Human and sustainable development	- Resilience, - reduction of social vulnerability	- Early warning
	human being	- Disarmament	- Democratic governance			- disaster response
		- landmines	- Rule of law			- disaster preparedness
		- small arms				
		- cluster bombs				
- scope (wide)	individual	UNDP (1994), CHS (2003), Friends of Human Security (2006-) Japan, Mexico (co-chairs) Some member states of the Human Security Network (1999-)				
- scope (focus during their presidencies of the HSN and the ministerial in their country)		Norway (1999) Switzerland (2000) Canada (2005) Netherlands (left in 2007)	Austria (2003) Human rights education Slovenia (2007) Children in armed conflicts	Jordan (2001) Chile (2002) Mali (2004) Thailand (2006) Costa Rica (South Africa)	Ireland (2009): Gender security	Greece: (2008): climate change

Table 2: Four Pillars of Human Security. **Source:** Brauch (2009: 983). The table was stimulated by Ulbert and Werthes (2008:21) who developed it based on Hampson/Daudelin/Hay/Martin/Reid (2002: 33).

Pillars of human security	Representatives and central actors	Key Elements (policy agendas)	Examples for key strategies and tools	Reference object
Freedom from fear	<ul style="list-style-type: none"> - UNDDA - UNIDIR - Canada, Norway, Switzerland, Austria, Slovenia, Chile - <i>Human Security network</i> - IFRC-RCS 	<ul style="list-style-type: none"> - <i>protection</i> against violence and remnants of wars, post-con-flict rehabilitation peace building - subsistence rights 	<ul style="list-style-type: none"> - measures of conflict and crisis prevention - measures of peace consolidation - humanitarian aid - humanitarian intervention (responsibility to protect) - disarmament (land mines, cluster bombs, small, light arms) - humanitarian law 	<i>individual</i> (as a victim of violence)
Freedom from want	<ul style="list-style-type: none"> - UNDP (1994) - CHS (2003) - Japan, Mexico - <i>Friends of Human Security</i> 	<ul style="list-style-type: none"> - social, economic <i>empowerment</i> for human development - right to development 	<ul style="list-style-type: none"> - overcoming social, economic inequality and injustice - participation at local, subnational, national and global level 	<i>individual</i> (as a victim of material insecurity: hunger, poverty)
Freedom to live in dignity	Kofi Annan (2005) <i>Study Group on Europe's Security Capabilities</i>	<ul style="list-style-type: none"> - legal <i>protection, empowerment</i> - basic personal, economic, social rights, 	<ul style="list-style-type: none"> - role of law - effective law enforcement - democratic governance - sanctions - persecution e.g. ad hoc courts, international court of justice 	<i>individual</i> (as a victim of legal violation or lack of legal entitlements, human rights)
Freedom from hazard impacts	<ul style="list-style-type: none"> UNU-EHS (2005) HSN ministerial in Thailand (2006) Greece (2008) 	<ul style="list-style-type: none"> - social, economic, <i>empowerment</i> - reducing impact - building of resilience 	<ul style="list-style-type: none"> - sustainable development - climate change - natural disasters (early warning, disaster response and preparedness) 	<i>individual and humankind</i> (as a cause and victim)

Table 3: Systematic overview on referent objects, key values, nature of threats and agents of insecurity and policy agendas referred to in the debate in the United Nations General Assembly on 22 May 2008. **Source:** Brauch (2009: 970-972) based on speeches analyzed by the author.

Country	Referent Object	Key goals and values	Nature of threats	Source	Policy agenda
Slovenia (EU, HSN, OECD, OSCE, NATO)	Individual	Promote people's rights and freedoms, protect them from both violent and non-violent threats	Hunger, poverty, infectious disease, environmental degradation, climate change, armed conflicts, crime, repression, terrorism. forced migration, human trafficking	Individuals, eEnvironment, states	Humanitarian, Law (protection)
Iraq (Arab group)	Peoples States have exclusive responsibility to ensure HS	Discussion of HS must respect principles of sovereignty, non intervention, right to self-determination. Opposed to 'responsibility to protect'. achieve the MDGs	Disease, illiteracy, vulnerable groups (women, children), natural and man-made disasters, climate change, WMD, mines, arms trafficking, food and water security, international conflicts	Foreign intervention, terrorist groups	State sovereignty, respect of UNCharter UDHR, respect for traditional rules of diplomacy
Tonga (SIDS)	People, Poor communities	Right to development, protect livelihood and dignity of people, basic need for food, water, shelter, livelihood	Climate change, intensive flooding, coastal settlements, decline in food production, water stress, health implications, infectious diseases, malaria, dengue, increased migratory pressures, droughts, natural disasters	Human kind, nature	Development, Environment, Climate change
Japan (FHS, OECD)	Individual vulnerable people and communities	Freedom from fear, freedom from want, enjoy their rights, fully develop their potential Culture of empowerment and protection	Wide range of threats, conflict, violence, poverty, underdevelopment, infectious disease, human rights violations, natural disasters		Human development
Mexico (FHS, OECD)	Human person	Political, legal, economic, social, cultural, civil, military means of protection of a person	Climate change, natural disasters food crises, food security scheme, early warning and proactive action small and light arms, control traffic of these weapons	Human-kind, nature	Disarmament, Development, Environment
Greece (HSN, OECD, OSCE, EU, NATO)	Human being, vulnerable population groups, women, children, elderly, migrants	People can live in security and dignity, human rights education protecting women and children from violence Freedom from fear, want and live in dignity	Anti-personnel landmines, small and light weapons, threats from human conflict, natural disasters, poverty, discrimination, disease, scarcity of natural resources climate change, vulnerable regions, pre-existing conflicts, poverty, unequal access to resources, weak institutions, food insecurity, disease	People's states, nature	Disarmament, Human rights, Environment (climate change, disasters)
Mongolia	Individual	Food and physical security, preventive measures to reduce vulnerability and minimize risk, human rights covenants, right to development, protection of people in violent conflict, of migrants, human life and dignity	Food crisis regionalism, ethnicity, mass migration, communal violence, ecological vulnerability	Nature	Human rights, Development, Environment

Country	Referent Object	Key goals and values	Nature of threats	Source	Policy agenda
Turkey (OECD, OSCE, NATO)	People states	Right of people to live in freedom and dignity, free from poverty and despair, strengthen human rights and development	Hunger, disease, natural disasters, environmental problems	Environment	Human rights development, Environment
Monaco	Human being	Development agenda. civil society, protection of the child	Desertification and biodiversity loss, impacts of natural disasters on conflicts		Protection, development
Qatar (Arab League)		Fundamental right of all to education on human rights and democracy			Human rights education
Egypt (Arab League, AU)	Individual peoples State to provide security	Debate in UN GA to be based on non-intervention, development and human rights, human development, health education, protection of women and children, human development, dignity	Natural and environmental disasters, climate change, nuclear disasters, acquisition and stockpiling of nuclear weapons and other weapons of mass destruction, landmines, illicit trade with small and light weapons, integrated approach to food security		Human rights, development environment (climate change, disasters)
Austria (HSN, OECD, OSCE, EU)	People, individual, most vulnerable women	Freedom from fear and want, equal opportunity to enjoy their rights and develop their potential, live in dignity free of poverty and despair Human rights education Psycho-social rehabilitation of children	Cluster bombs, land mines Children and armed conflict Small and light weapons Human trafficking Women, peace and security Climate change		Humanitarian law, Human rights Disarmament
Portugal (OECD, OSCE, EU, NATO)	People	Human dignity through human rights	Climate change and DRR strategies		Human rights, climate change
Chile (HSN, OAS)	Individual community	Human rights and dignity, security and development Disarmament and humanitarian law Human health, pandemics, children in conflicts	Natural disasters		Human rights, disarmament disasters
Columbia (OAS)	State has primary responsibility	Development, peace and security and human rights	Too broad, difficulty to find agreement on relevant threats		Development, peace & security human rights
Philippines (ASEAN)	Human person	Human security is at the heart of UN Charter Quality of life	Food security, health security, environmental security, energy security, political security		
Cuba (OAS)	Human security an empty rhetorical phrase opposed	Protect sovereignty of the state	unjust, unequal, unsustainable international order, unequal trade, impenetrable markets of industrialized countries, speculation, restrictions on technology transfer unsustainable production and consumption, climate change, nuclear weapons		

Country	Referent Object	Key goals and values	Nature of threats	Source	Policy agenda
Switzerland (HSN, OECD, OSCE)	people	Humanitarian law, reduction of armed violence, conflict prevention	Armed violence impedes development, organized crime, gangs, gender-based violence Small arms and light weapons	Armed conflict	Humanitarian law & disarmament
Thailand (HSN, FHS, ASEAN)	Vulnerable people	Freedom from want and fear, human trafficking MDGs, global partnership for development	Human trafficking underdevelopment		Human development, protection
Brazil (OAS)	Sceptical of scope and purpose	Right to development, Economic and social development, human rights education	Hunger and poverty, underdevelopment, climate change, MDGs, food prices, HIV/AIDS, gender-motivated violence		Development, human rights
Kazakhstan (OSCE)			Natural disasters, climate change, proliferation of weapons of mass destruction, water scarcity, food crisis		Disarmament, Climate change
Canada (HSN, OECD, OSCE, NATO)	World's people individual	Freedom, democracy, human rights, rule of law, protection of civilians, of children in armed conflicts, landmines, ICC, tribunals for human life, dignity, safety			Disarmament, human rights
Sudan (AU, Arab League)	Definition of HS must respect state sovereignty and its responsibility for HS	Social peace and stability, access to food, education, health, respect of fundamental rights and freedoms, right of refugees to return to their homes	Conflicts/civil wars, lack of respect for basic principles of international law and practices (e.g. right to self determination, non-intervention)	Interventionist states	Define HS within the exclusive framework of UN Charter and by the GA
South Korea (FHS)	Individual community	Need of people on the ground (economic security of people)	Food crisis, violence against women, sexual violence		Development protection
Israel	People, individual		Climate change, environment, sustainable development, non-proliferation, human rights, armed conflict, culture of hate, crime prevention, terrorism and others		Protection development environment

Table 4: Compilation of Human Security Threats, Challenges, Vulnerabilities, Risks. **Source:** Brauch (2009: 986; based on 2005a: 80).

Humans security infringements posed by	Human Security			
	Threats to	Challenges for	Vulnerabilities to	Risks for
Underdevelopment ('freedom of want')	- Human well-being, - human health - life expectancy	- social safety nets - human development - food security	- economic crisis and shocks - communicable diseases	those most vulnerable (socially, economically) and exposed to
Conflicts & human rights violations ('freedom from fear')	- Human life and personal safety (from wars) - identity, values	- feeling secure in a community - human rights - democracy	- war lords, criminals - corrupt regime, ruler - human rights abuses, violations	underdevelopment, violence and hazards: - poor - women, - children, - old people - indigenous - minorities.
Hazards & disasters ('freedom from hazard impact')	- Livelihood - survival - settlements	- sustainable development - food security	- exposed population - livelihoods, habitat - disease (cholera, dengue, malaria, etc.)	

Table 5: 'Human Security' Policies and Measures for Coping with Environmental Threats, Challenges, Vulnerabilities, and Risks for 'Ecosystems' and 'Sustainability'. **Source:** Brauch (2009: 987).

Strategies & means for coping with	Threats of	Challenges of	Vulnerabilities of	Risks of
	Environmental Security for			
<i>Sustainable development policy goals</i>	- Air (climate), soil, water	- agriculture and food security	- vulnerable people (old, children, women, indigenous groups)	
<i>Environment policy (implementation of environmental treaties, regimes)</i>	- Climate change, - soil erosion, - water scarcity and degradation	- economy - agriculture - tourism - health	- rural livelihood - urban habitat - transport & economic infrastructure	- reducing exposure of people with low resilience
<i>Early recognition (research, education, training, agenda-setting)</i>	- Extreme weather events (storm, flood, drought)	- agriculture (shift in crops)	- city planning - building standards	- enhancing knowledge of these people
<i>Early warning of hazards and disasters</i>	- Hydro-meteorological (storms, floods, drought) and geophysical (earthquake, volcano, tsunami) hazards	- agriculture (specific crops) - public health	- vulnerability mapping of hazard prone areas and housing	- enhancing training of these people
<i>Effective disaster preparedness and rapid disaster response</i>		- (inter)national organizations and resources	- vulnerability mapping of hazard prone areas and housing	- enhancing protection of these people
<i>Humanitarian aid</i>	- Hazards and conflicts	- access to affected areas	- spread of infectious disease	- reducing low recognition
<i>Refugee assistance</i>	- Distress migration	- environment - food supply	- refugees (in times of conflict)	- old, weak and poor

Table 6: The Human Security Network and the four pillars of the Human Security Concept. **Source:** Fuentes/Brauch (2009: 999 based on Hans Guenter Brauch/UNESCO 2006, 2008.

Pillars	UNDP 1994	Pillar I: 'Freedom from want'	Pillar II: 'Freedom from fear'	Pillar III: 'Freedom to live in Dignity'	Pillar IV: 'Freedom from hazard impacts'
Policy and issue areas (goal)	Human security	Human, economic, social development	Violence in conflicts, small arms	Rule of law, human rights, democracy	Environmental stress & natural hazards
Promoters (UN System)	UNDP	UNDP, UNESCO, UNU	UNESCO, UNDP, UNU	Secretary General, UNESCO, UNHCR, HRC,	UNESCO, OCHA, UNEP, UNDP, UNISDR, UNU-EHS
Governments		Japan, Thailand, HSN	Canada, Norway, HSN	Austria, Switzerland, Slovenia	<topics: EU, Germany, Japan>
Dimensions					
• Military			(x)		
• Political	(x)		(x)	(x)	
• Economic	(x)	(x)	(x)		(x)
• Societal		(x)	(x)	(x)	(x)
• Environmental	(x)	(x)	(x)	(x)	(x) ENVSEC
Sectoral Security Concepts					
- Food	(x)	(x)		(x)	(x)
- Water		(x)	(x)	(x)	(x)
- Health	(x)	(x)		(x)	(x)
Other Features					
o Community	(x)				
o Personal	(x)				
o Gender			UN-INSTRAW		
o Livelihood					
Agenda items of the Human Security Network (1999-2006)		human & people-centred development, HIV/AIDS,	Antipersonnel Landmines, protection of children in armed conflict, control of small arms & light weapons, conflict prevention, women, peace, security	Internat. Criminal Court, Human Rights Council; Human rights education, implementation of international humanitarian & human rights law, against transn. organized crime, human trafficking	Discussed at the 8 th ministerial meeting of the HSN on 1-2 June 2006 in Bangkok

Table 7: Agendas of eleven Ministerial Meetings of the HSN (1999-2009). **Source:** Fuentes/Brauch (2009: 994 based on Compilation, based on “Chair’s Summary” of the Ministerial Meetings of the HSN.

Lysoen, Bergen Norway 1999	Lucerne Switzerland 2000	Petra Jordan 2001	Santiago Chile 2002	Graz Austria 2003	Bamako Mali 2004	Ottawa Canada 2005	Bangkok Thailand 2006	Ljubljana Slovenia 2007	Athens Greece 2008	Dublin Ireland 2009	Costa Rica 2010 *)
<ul style="list-style-type: none"> • Antipersonnel landmines • Small arms • Children in armed conflict • Human Rights • International humanitarian law • International Criminal Court • Peacekeeping • Conflict Prevention • Transnational organized crime • Development and Security 	<ul style="list-style-type: none"> • Small arms • Armed non-state actors • Corporate Citizenship • Education in Human Rights • Children in armed conflict • Armed non-state actors • Corporate citizenship • Conflict Prevention • International Criminal Court • Antipersonnel landmines • Protecting civilians in armed conflict 	<ul style="list-style-type: none"> • Development and Human Security • Peacekeeping • Children in armed conflict • Human Security Index • HIV/AIDS • Gender and human security • Small arms 	<ul style="list-style-type: none"> • Human Security Index • Education in Human Rights • Public security and human security 	<ul style="list-style-type: none"> • Children in armed conflict • Education in Human Rights 	<ul style="list-style-type: none"> • Children in armed conflict • Small arms trafficking • Gender and peace-keeping • Education in Human Rights 	<ul style="list-style-type: none"> • United Nations reform • UN Secretary General Report “In Larger Freedom” 	<ul style="list-style-type: none"> • People-centred development • HIV/AIDS • human trafficking • new issues: environmental change and natural hazards 	<ul style="list-style-type: none"> • Landmines, cluster munitions • protection of women, children, • fight against HIV/AIDS • human trafficking • fight against poverty • WG on children in armed conflicts • climate change impact on vulnerable groups. 	<ul style="list-style-type: none"> • Climate Change and developing countries • Climate change and women • Climate change and children • Climate change and migrants 	<ul style="list-style-type: none"> • Role of women in peace-making • protection of women in armed conflict, • implementation of UN SC res. 1325 on women, peace and security • UN SC Res. 1820 sexual violence against civilians as a war crime 	<ul style="list-style-type: none"> • cross-cutting gender commitments, • punishing perpetrators, protecting against conflict-related sexual violence • establishment of monitoring, reporting & analysis arrangements • adoption of sanctions

*) This text is based on a statement of Costa Rica at the UNSC on 12 Dec. 2010. It is unclear whether a ministerial of the HSN took place in 2010 in Costa Rica.