1965 - 2015

50 שנה
ליחסים הדיפלומטיים
ישראל-גרמניה

50 Jahre
Diplomatische Beziehungen
Deutschland-Israel

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Sustainability and Peace-Building in the Middle East

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Sustainability and Peacebuilding in the Anthropocene

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1. Introduction

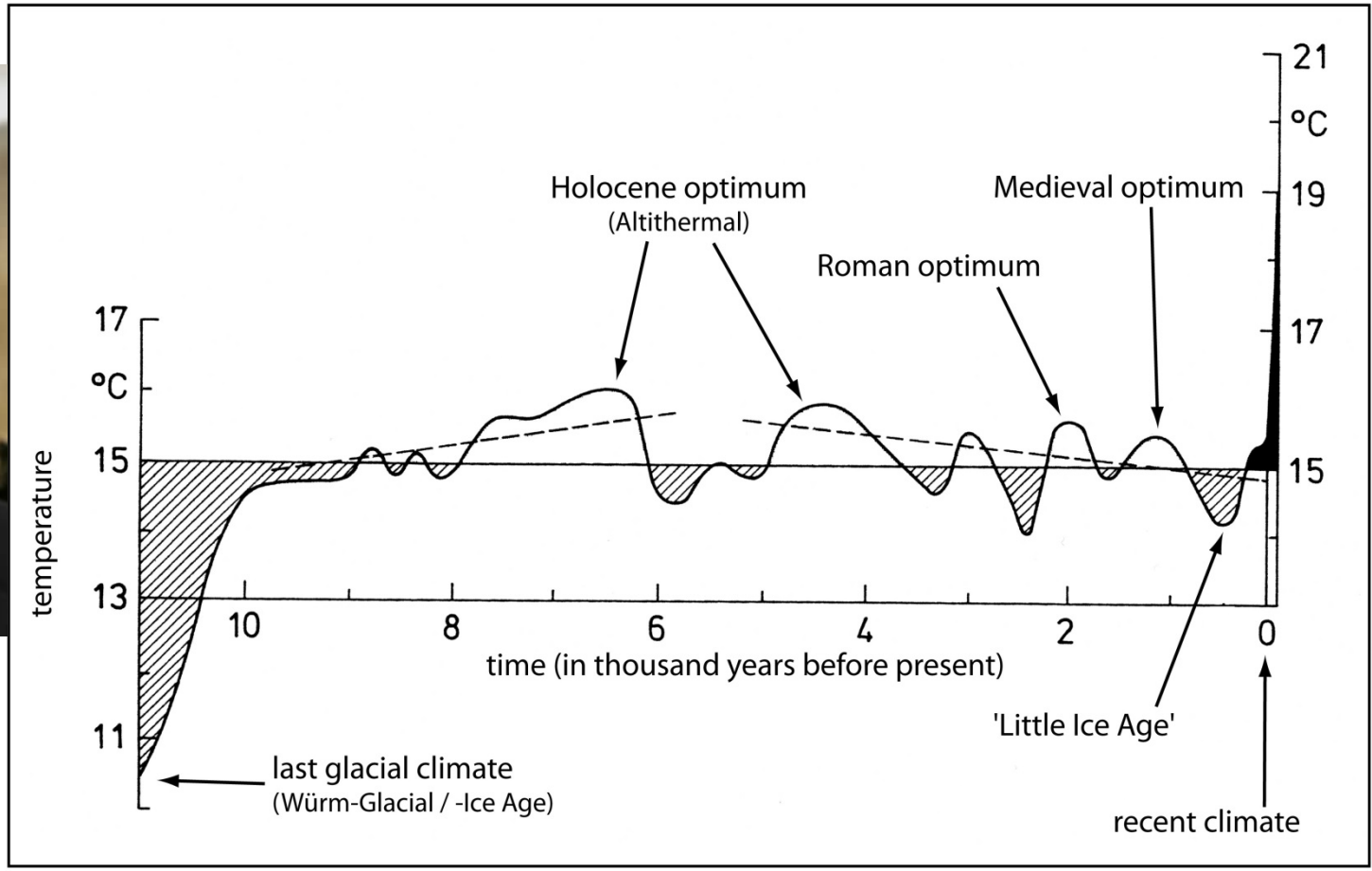
- **Sustainability and Peace Building in the Middle East! A Dream?**
- At WISC I in Istanbul in 2005 **Mohammad Dajani** contrasted **two big dreams** of Israelis and Palestinians **and a small hope for peace. This small hope has become smaller since then but the need for *Sustainability and Peace Building in the Middle East* has increased.**
- **I will not offer a policy analysis nor a contrafactual analyis (Lebow):**
  - of the decline of the peace process since 2000;
  - on the envirionmental impact of the ME conflict & of the Gaza confrontations;
  - nor will I speculate what could have happened if Rabin would not have been killed and if the peace process would have succeeded.
- **I will offer a conceptual analysis and refer to a thought experiment:**
  - **Conceptual analyis of the linkages between two fields of Political Science**
    - **Environmental studies & Peace research and of what I call „peace ecology“**
  - **Thought experiment: How cooperation may address the common threat facing the Middle East resulting in „environmental peacemaking“ (Conca)**

2. Focus is Conceptual and not Political

- **This conceptual analysis is based on three projects**
  - **Reconceptualizing of Security** (1990) due to 3 causes:
    - **End of the Cold War** (1989-1990)
    - **Globalization** since 1940s and 1990s
    - **Impacts of Global Environmental Change in the Anthropocene**
  - **Climate Change, (Human) Security and Violent Conflicts**
    - Analysis of possible socio-political consequences of global environmental change and climate change on migration, conflicts and even wars
  - **Sustainability Transition & Sustainable Peace Handbook**
    - **G-8 in Kühlenborm (2007) and by G-7 in Elmau (2015)**
    - **Self-destroying prophecy**: Nonmilitary Counterstrategies:
    - **Peace benefits: avoidance of resource conflicts** (on oil, gas, coal) & of **consequences of climate change** impacts?

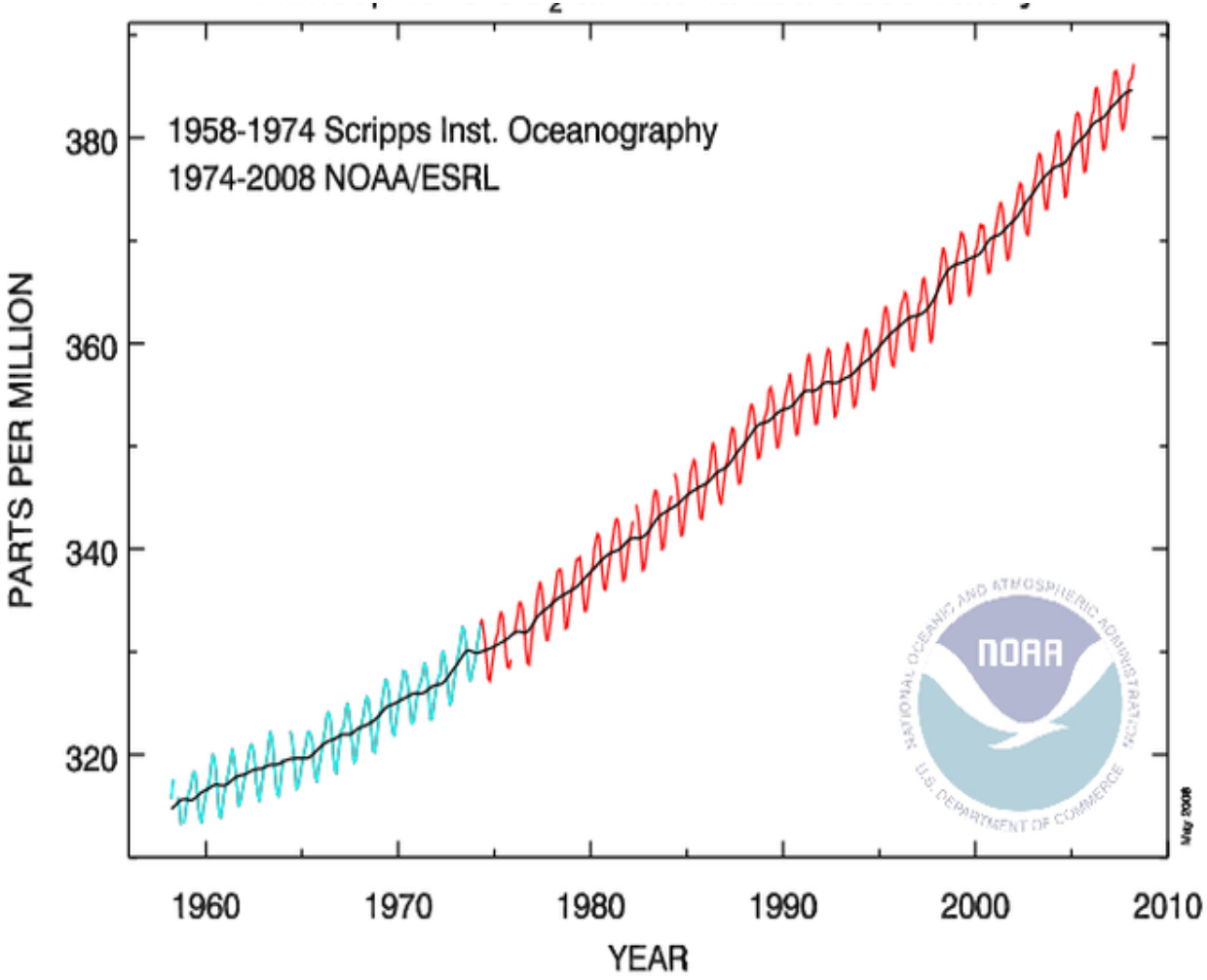
3. From the Holocene (12.000 years b.p.) to the Anthropocene (1784 AD)

Paul Crutzen, Nobel Laureate for Chemistry (1995)



In Geology/geography: **Holocene** era of earth history since end of glacial period (10-12.000 years ago, Anthropocene, since industrial revolution (1784, J.Watt's invention of steam engine: anthropogenic climate changte: burning of coal.oil,gas➔GHG increase in the atmosphere

3.1 Anthropogenic Climate Change in the Anthropocene Era (1750 to present)



- GHG concen-tration in the atmosphere
- 1750: 279 ppm
- 1958:315 ppm
- 1987: 387 ppm
- 2011: 393 ppm
- 2012: 396 ppm
- 2013: 400pp,
- 1/3: 1750-1958:
- 2/3: 1958-2013: 315 to 400 ppm

3.2 Relevance for Science & Practice

- **Crutzen** et al. challenged the **traditional worldview** and the periodizartion of **geologists** on the phases of earth history.
- **Crutzen:** We are in the **midst of a global transition in earth history** that was triggered by the **industrial and second technological revolution** resulting in significant **anthropogenic transformation of the earth system** that has been coined by Paul J. Crutzen as the transition from the '**Holocene', period since end of the glacial period 12.000 years ago, to 'Anthropocene**' that started with the **increasing human interventions into the earth system**.
- The **impacts of the transformations** of these processes have resulted in a complex global environmental change and an **anthropogenically-induced climate change besides the increasing destruction of biodiversity that has resulted in an exponentially growing accumulation of GHG in the atmosphere** that have also affected almost all environmental services.
- **The societal impacts** of the physical effects of 'anthropogenic global climate change' and of biodiversity loss **may result in major international, national and human security dangers and concerns that have been discussed since 2000.**

3.3 A New Contract for Planetary Stewardship

- **In 2003, in Dahlem Clark, Crutzen, Schellnhuber called for a new scientific revolution, a new worldview and paradigm of a 'Science for Global Sustainability'**
- They noted that "only very recently, has it become evident that the **Anthropocene crisis forces humanity to manage consciously a transition toward sustainable use of the Earth".** They argued that "the realization that the range **of organized, disciplined, reflective activity needed for intelligently and effectively guiding a sustainability transition** was much broader than is subsumed in term of 'science'."
- They considered the **earth systems science as a key promoter of such a transition**, what requires a **change in the scientific world view** and orientation recognizing that sustainable development is a knowledge-intensive activity.
- They pointed to a growing consensus "**that management systems for a sustainability transition need to be systems for adaptive management and social learning"**.
- They argued that 'Wissenschaft' can contribute information, incentives and institutions by mobilizing the right knowledge, by integrating knowledge, by balancing flexibility and stability and contributing infrastructure and capacity.
- They suggested "**A New Contract for Planetary Stewardship**", linking science and society that was taken up in 2011 in he **WBGU's Flagship Report suggesting "A Social Contract for Sustainability"**

4. We are the Threat!
We are the Victims!

4.1 Security Perceptions in the Middle East

- **Three security phases may be distinguished:**
  - **Premodern**: rule & security (without a nation state)
  - **Modern**: Westphalian state: sovereignty: i) territory, ii) people, and iii) system of rule
  - **Postmodern**: Deterritorialization (EU Schengen regime)
- **In the Middle East the narrow Hobbesian security perspective of national military security prevails**
  - **Israel: narrow territorial national & military security**
  - **Palestine:** an **occupied territory without sovereignty** aspiring for state sovereignty.

4.2. Our Governments do not Seem to Care UN Climate Change Negotiations are Blocked!

- **UNFCC (1992)**
- **Kyoto Protocol (1997)**
  - Annex I country: -
  - Non-annex I countries: no reduction obligations
- **COP 15 (Copenhagen) 2009**
- **COP 16 (Cancun) 2010**
- **COP 17 (Durban) 2011**
- **COP 18 (Doha) 2012)**
- **COP 19 (Warsaw) 2013**
- **COP 20 (Peru) in 2014**
- **COP 21 (Paris) in 2015 (??)**

Goal by 2015 agreement to enter into force by 2020: At present doubtful

4.3. What and Who is the Cause and Who are the Victims?

What is the cause?

- **Burning of hydrocarbons:**
  - Coal. Oil and gas
- **Modern economy:**
  - Energy, transportation
  - agriculture

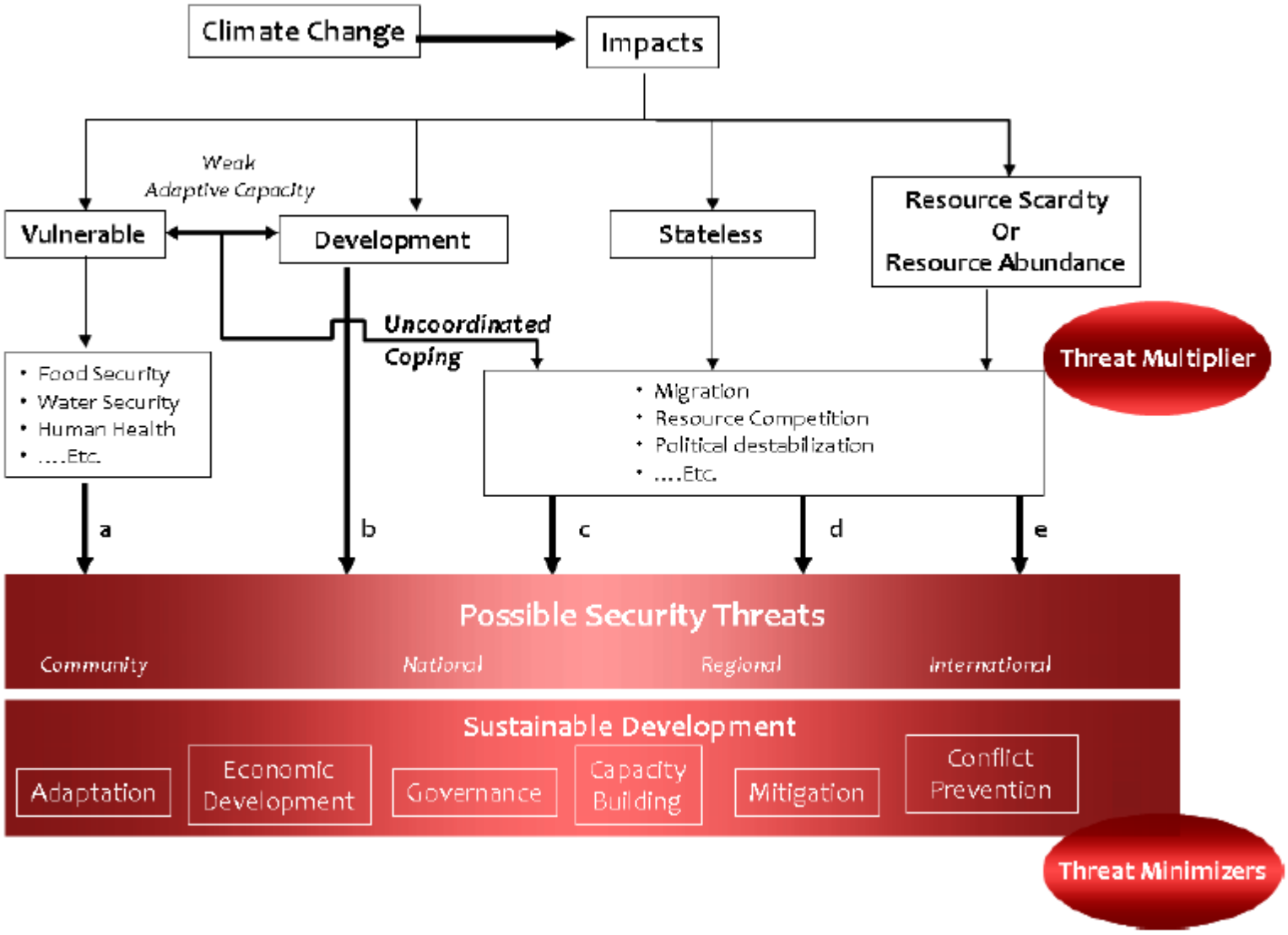
Who is responsible?

- **Historically: industrialized countries**
- **But increasingly: threshold countries**
  - **2007: China overtook USA**

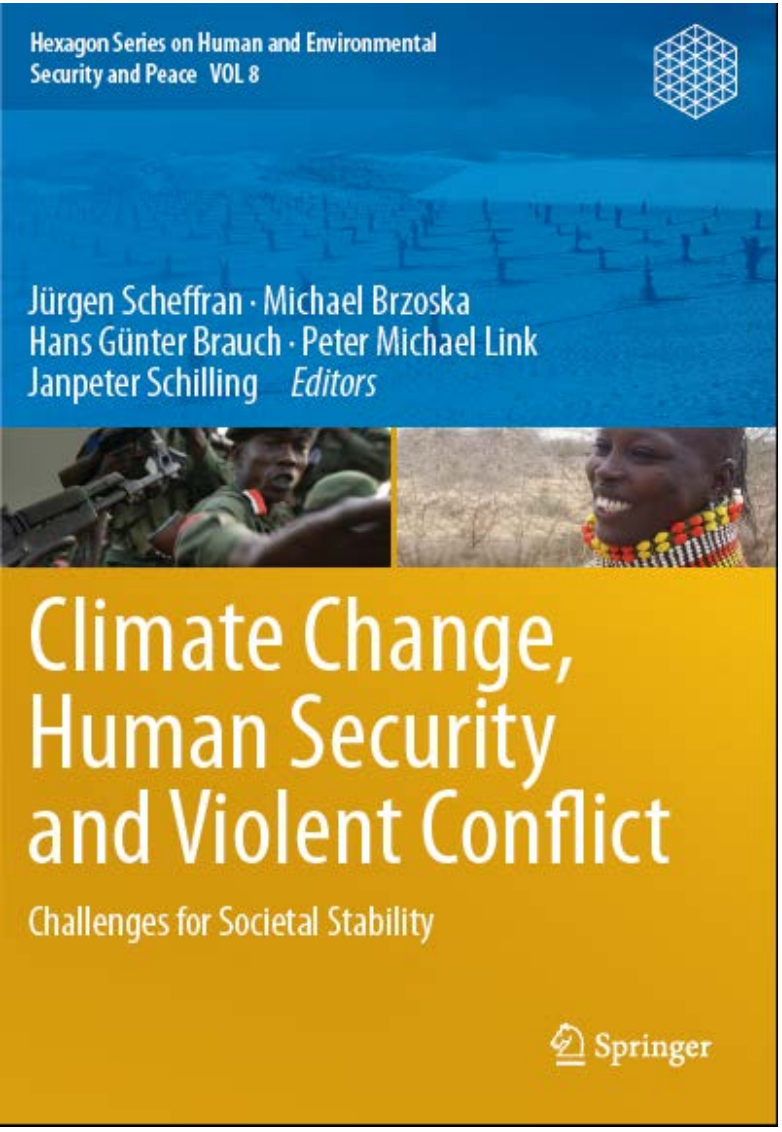
Who is the victim?

- **South: (storms, floods & drought) especially Africa & Asia**
  - **China**
  - **India**
- **But also the North**
  - **USA (Katrina, Sandy)**
  - **Germany (2002, 2013) floods**
- **We are all responsible:**
  - **North and South**
- **We both have to act**
  - **North and South**
  - **Europe & Middle East**

4.4 Two Debates: Climate Change & Security vs. Sustainability Transition



4.5. Two Policy Debates & Scientific Discourses: Climate Change & Security vs. Sustainability Transition



First debate is primarily policy driven and evolved in the framework of inter-national, national and human security.

Scientific discourse:

- Hamburg workshop 11/2009 (**Scheffran/Brzoska/ Brauch/Link/Schilling, 2012**) has been pursued from different policy and scientific perspectives and with different scientific methods.
- Trondheim workshop, 6/2010 (**Gleditsch, 2012**, special issue of **Journal of Peace Research**

S***econd debate*** is partly policy driven, (green gowth, economy by UNEP, OECD & DGs of the European Commission.

- *Scientific discourse* on sustainability transition evolved in Europe since confer. in Amsterdam (2009); Lund (2011), Copenhagen (2012) within
- *Sustainability Transitions Research Network* (STRN) & is documented in a journal on *Environmental Innovation and Sustainability Transition* (EIST) & *Routledge Book Series in Sustainability Transitions*.´

4.6. Second Debate: Sustainable Development (goal) Sustainability Transition (process)

US National Academy of Science (NAS) Report of 1999: Sustainability transition' research has evolved since 2004:

- **Dutch *Knowledge Network on Systems Innovation &Transition***
  - complex systems analysis,
  - socio-technological and a governance perspective".
- **Parallel discourse on 'sustainability transition'** addresses both the causes and impacts of GEC and GCC by coping with both and avoiding the projected societal consequences of dangerous or catastrophic climate change and of possible tipping points in the climate system.
- The goal of **'sustainable development'** and process of **'sustainability transition' refer to a wider research agenda than the relatively narrow focus on environmental and technological innovations of the Sustainability Transition Research Network (STRN).**
- The process of '**transition' refers to multiple long-term evolutionary and revolutionary transformative changes** that point to five different historical times, with different transformative results

5. Linkages between *environmental studies* & *peace research: Sustainability & Peacebuilding*

- **Four research programmes in political science and international relations**
  - Security Studies: Realist tradition
  - **Peace Research or Studies**: pacifist & scientistic tradition
  - Development Studies
  - **Environment Studies (Ecology)**
- **Bridgebuilding Efforts: Peace & Ecology Studies**
  - **Kenneth Boulding:** spaceship & cowboy (Stephenson, 2016)
  - **Environmental security debate** (since 1989: Matthews, Myers, Homer-Dixon, Baechler et al.)
  - **Environmental peacemaking** (Ken Conca, Dabelko 2002)
  - **Political Geoecology in the Anthropocene** (Brauch/Dalby/Oswald Spring, 2011)
  - **Peace Ecology:** Kyrou (2007), Oswald Spring/Brauch/Tidball (2014), Amster (2014)

5.1 Linkages*: sustainability & peacebuilding*

Sustainability

Which ‚sustainability' concept?

- Forestry: H.C.v. Carlowitz (1713) in *Silvicultura oeconomica*

Sustainable Development: goal

- **Brundtland Commission (1987) intergenerational**

Sustainabity Transition: process

- **Dutch project (2005-2010):** Systems innovation & Sust. trans.
- **Sust. Trans. Research Network(STRN)**
- EIST journal (Elsevier), 'Routledge Studies in Sustainability Transitions'

Peacebuilding

Peace as a goal: which 'peace'?

- Pax humana vs. Pax Romana
- **Shalom:**
- **Salam:**
- Ahimsa: Peace with nature
- Permanent (enduring) peace (I. Kant)
- Negative vs. positive peace (J. Galtung)
- Positive peace: with justice (utopian)
- **Sustainable peace: with nature (or creation) (ambitious)**

Peacebuilding as a process

- **Scientific concepts**
- **Policy concepts: UN context:**
  - **UN Peacebuilding Fund**
  - **UNICEF**

5.2 Sustainability, Sustainable Development, Sustainability Transition

Concept of Sustainability:

- Since 1980s *sustainability* is used for human sustainability on planet Earth.
- Sustainability traces human-dominated ecological systems since earliest civilizations.
- In 21st century, there is increasing global awareness of the threat posed by the human greenhouse effect, produced largely by forest clearing and the burning of fossil fuels.

Conceptual & Policy Goal of Sustainable Development:

- Brundtland Commission (1987): "**sustainable development is development that meets needs of the present without compromising the ability of future generations to meet their own needs."**

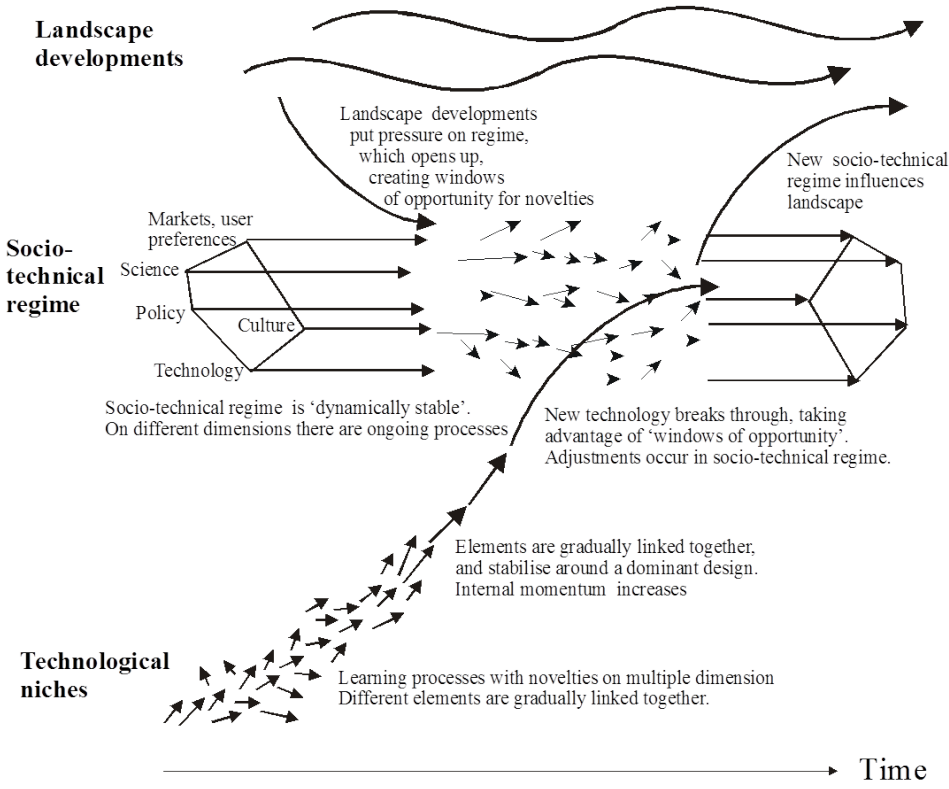
Conceptual & Policy Process of Sustainability Transition:

- **US Origins**: **Tellus Institute** (1976ff.), **US National Academy of Science** (1999), **Kates** (2001: 15325) noted during the 1990s in the US "an effort to re-engage the scientific community around the requirements for a sustainability transition", which referred to "a transition towards a state of sustainable development, a **sustainability transition** was studied as a series of **interlinked transitions**, as a **process of adaptive management and social learning**, and as a set of indicators and future scenarios".

5.3 Sustainability Transition

European & Dutch origins:

- ST approach emerged from the *Dutch Knowledge Network on Systems Innovation and Transition (*KSI), (2005-10).
- **Grin, Rotmans & Schot (2010)** combined "3 perspectives : **complexity theory, innovation theory, governance theory**".
- They: "seek to understand transitions dynamics, and how and to what extent they may be influenced. … They [believe] that only **through drastic system innovations** and transitions it becomes possible to bring about a turn to a **sustainable society** to satisfy their own needs, as inevitable for solving a number of structural problems on our planet, such as the environment, the climate, the food supply, and the social and economic crisis. Among other things this implies that our world has to overcome the undesirable side effects of the ongoing 'modernization transition,' which began around 1750.



STRN focuses on sustainability problems in the **energy, transport, water & food sector**s from different scientific perspectives on the ways: in which society could combine **economic and social development with the reduction of its pressure on the environment**. (22 January 2015)<http://www.transitionsnetwork.org/>.

5.4 Peacebuilding

Scientific Definitions:

Peacebuilding overlaps with peacemaking, peacekeeping and conflict resolution combining two approaches:

- Most use the term to **refer to any stage of conflict**, e.g. as **preventive peacebuilding** efforts, (diplomatic, economic development, social, educational, health, legal and security sector reform programs, address potential sources of instability and violence). **Peacebuilding efforts** aim to manage, mitigate, resolve and transform central aspects of the conflict through official diplomacy as well as through civil society peace processes and informal dialogue, negotiation, and mediation. **Peacebuilding** addresses economic, social and political root causes of violence and fosters reconciliation to prevent the return of structural and direct violence.
- **Peacebuilding efforts aim to change beliefs, attitudes and behaviors to transform the short and long term dynamics between individuals and groups toward a more stable, peaceful coexistence. Peacebuilding is an approach to an entire set of interrelated efforts that support peace.**

UN Definitions:

- In "Agenda for Peace,"(1992**), UN SG Boutros Boutros-Ghali** introduced peacebuilding to the UN as "action to identify and support structures, which will tend to strengthen and solidify peace in order to avoid a relapse into conflict." **Brahimi Report (2000)** defined **peacebuilding** as "activities undertaken on the far side of conflict to reassemble the foundations of peace and provide the tools for building on those foundations something that is more than just the absence of war." In 2007, **Secretary-General's Policy Committee** has described peacebuilding as:
- **"A range of measures targeted to reduce the risk of lapsing or relapsing into conflict by strengthening national capacities at all levels for conflict management, and to lay the foundation for sustainable peace and development. Peacebuilding strategies must be coherent and tailored to the specific needs of the country concerned, based on national ownership, and should comprise a carefully prioritized, sequenced, and relatively narrow set of activities aimed at achieving the above objectives."**
- The **Secretary-General** has set out his vision for peacebuilding in three reports on post-conflict peacebuilding, and one on women's participation in peacebuilding. **The 2009 report identified five priority areas for international assistance: 1. Support to basic safety and security; 2. Political processes; 3. Provision of basic services; 4. Restoration of core government functions; 5. Economic revitalization**.

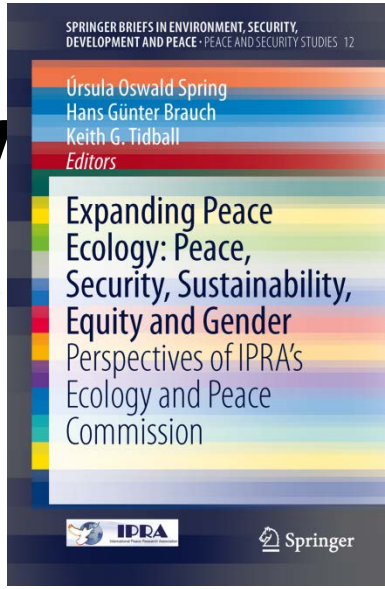
5.5 Peace Ecology: Linking Environmental and Peace Studies

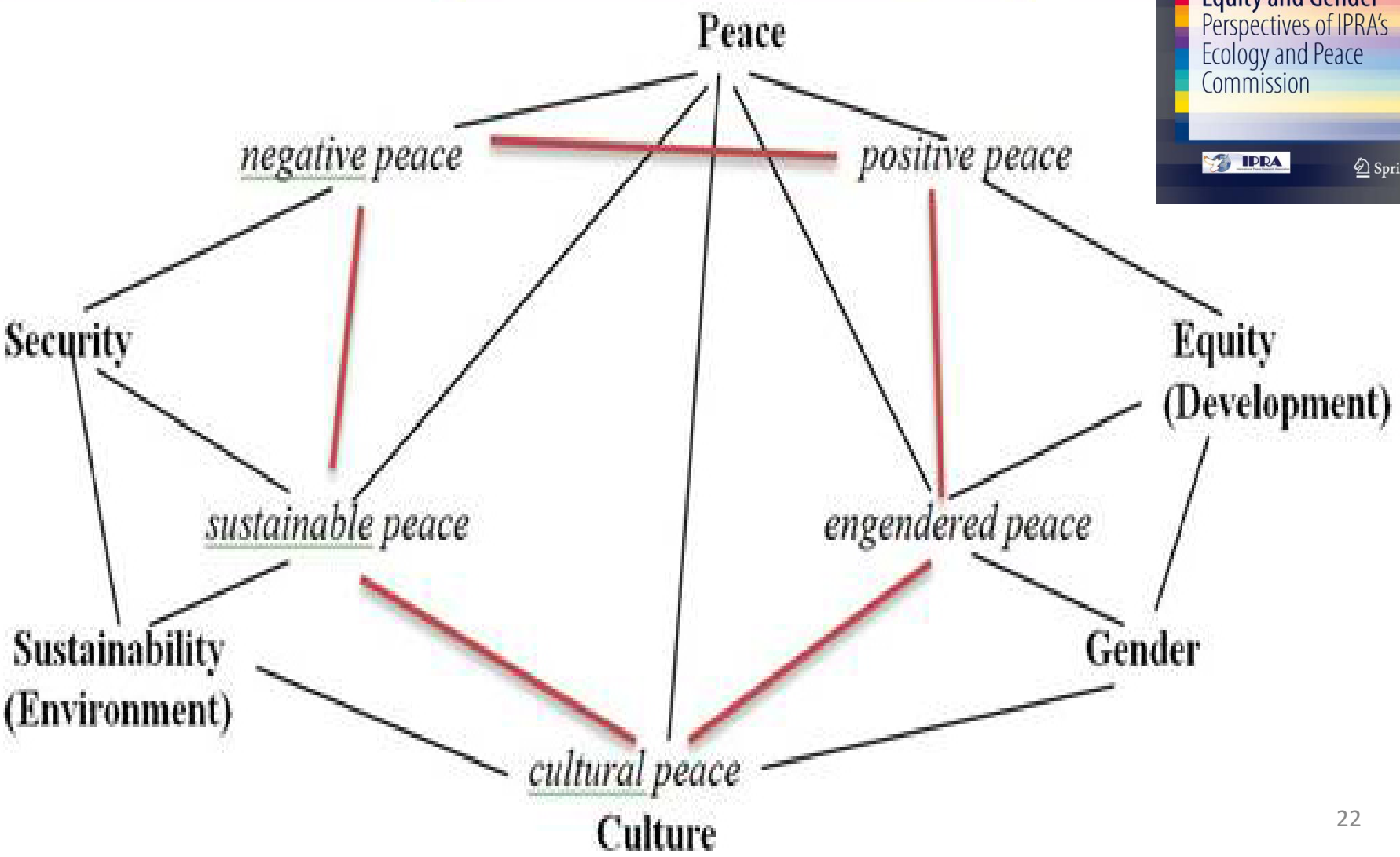
- **Kenneth Boulding**: Pioneer in linking economic, environmental and peace studies
- **Environmental Security:** Discourse since 1989
- **Ken Conca** (2002): **Environmental Peacemaking**
- **Peace Ecology** (Kyrou (2007) introduced 'peace ecology' as an "integrative, multi-contextual, and case sensitive approach in identifying resources for conflict and violence transformation" with the goal "**to include issues of conflict analysis and peacebuilding" into environmental studies".**
- **Randall Amster: Peace Ecology** (2014)

5.6 Expanding Peace Ecology

- **Peace ecology calls for "peace with nature"** that is being challenged by the manifold anthropogenic interventions into the earth system in the Anthropocene era.
- How human beings respond to these new dangers to the survival of the species but also of plants & animals through a declining biodiversity depends but on worldview of scientists but also on mindset of elites and on whether carbon lobbies succeed.
- ***Business-as-usual*** prevails when political, economic & military elites are unwilling or unable to act to address root causes of global environmental and climate change.
- Peace ecology in the Anthropocene may be conceptualized with **5 conceptual pillars of peace, security, equity, sustainability, gender** as: '**negative peace**' and for the relationship between peace and equity to '**positive peace**' concept, for interactions between peace, gender and environment '**cultural peace**' and for the relations between peace, equity and gender we propose the concept of an '**engendered peace**'.
- ***Sustainable peace*** refers to links among peace, security & environment, where humankind and the environment as 2 key parts of global Earth.
- **Sustainable peace** includes processes of recovering from environmental destruction, reducing the human footprint in nature through a **less carbon-intensive -** and in the **long-term possibly carbon-free and increasingly dematerialized production processes** that future generations may still be able to decide on their own resources.

5.7 Five Pillars of Peace Ecology





6. Climate Obligations & Performance in the Near East

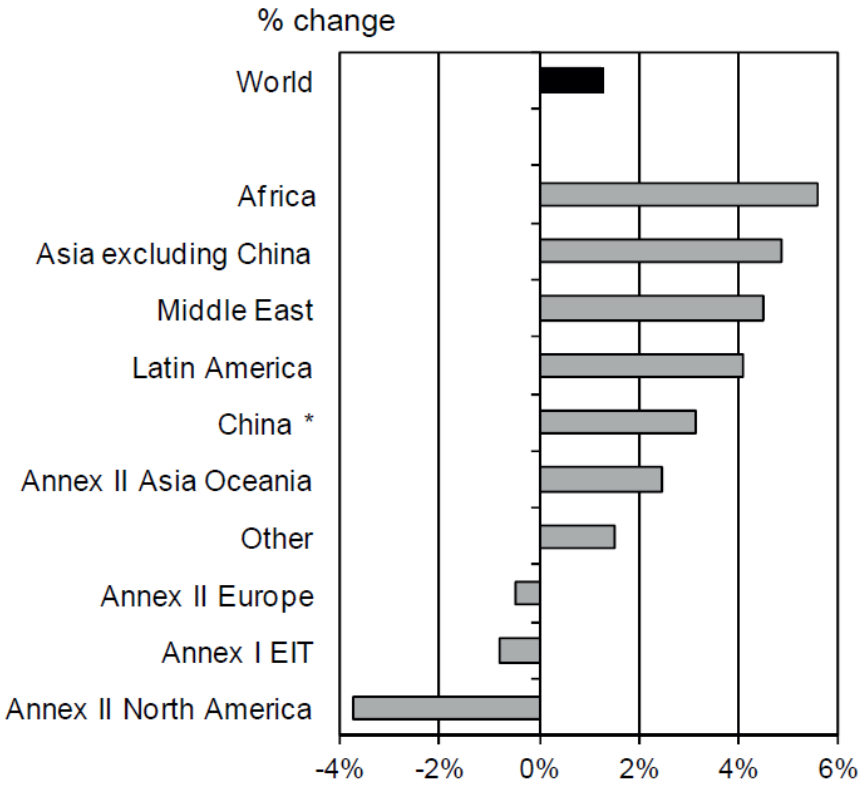
- **Climate History in the Middle & Near East**
  - Highly affected by climate variability during past 12 millenia
  - Source: Arie S. Issar & M. Zohar (2004/2007, HEX iv: 2009_6)
- **Climate Change Obligations**
  - No Annex 1 (UNFCCC) Annex B (KP) country: **no obligations**
- **Perception Gap on Climate Change in the Middle East**
  - **National Communications**
    - Israel: 1: 2000; 2: 2010
    - Palestine: none: no state not entitled to submit
    - **Jordan: 1: 1997; 2: 2009; 3: 2014**
    - Egypt: 1: 1999; 2: 2010
    - Syria: GHG Inventories 1994-2005 (2010)
    - Lebanon: 1: 1999; 2: 2011
- **Climate performance of Israel**:
  - No obligations under UNFCCC, Kyoto Protocol
  - **Changes in GHG emissions according to IEA & US Departm. of Energy**

6.1: IEA: 2012 CO2 Emissions Overview (2011/4)

million tonnes of CO_2

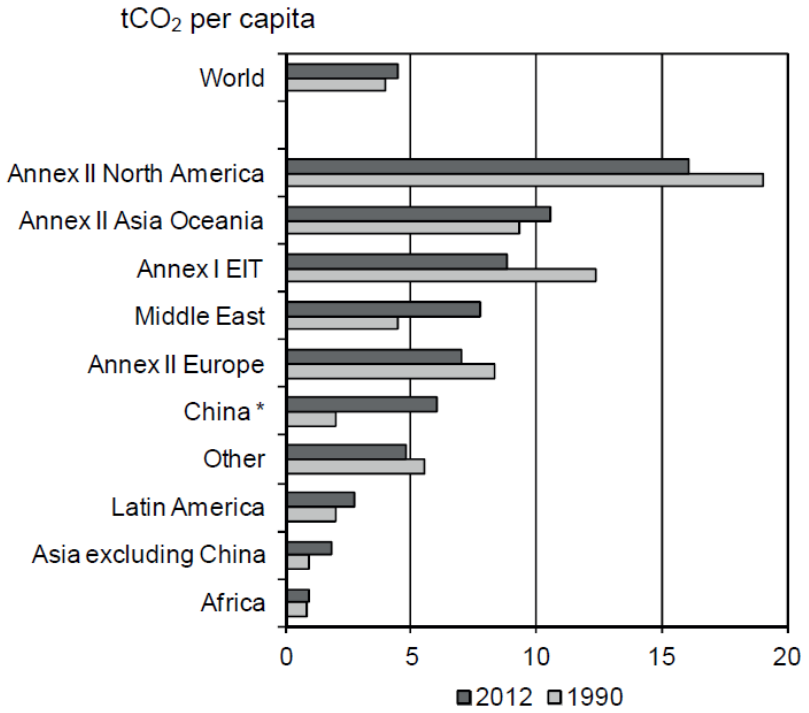
	1971	1975	1980	1985	1990	1995	2000	2005	2007	2008	2009	% change 90-09
World *	14 084.6	15 678.0	18 051.5	18 628.4	20 966.3	21 791.6	23 492.9	27 188.3	29 047.9	29 454.0	28 999.4	38.3%
Israel	14.4	17.1	19.6	24.5	33.1	45.8	54.8	60.2	66.9	66.4	64.6	95.0%
Middle East	9.29	12.35	12.35	14.44	24.09	24.58	25.67	26.34	30.11	31.86	34.45	43.0%

Figure 7. Change in CO_2 emissions by region (2011-12)



* China includes Hong Kong, China.

Figure 12. CO_2 emissions per capita by major world regions



* China includes Hong Kong, China.

6.2 Israel's Second National Communication (2010)

- **IEA (1990-2009): CO2 increase by 95% (IEA, 2011: 46)**
- **Available Official Data on GHG Emissions (DoE, 2010)**

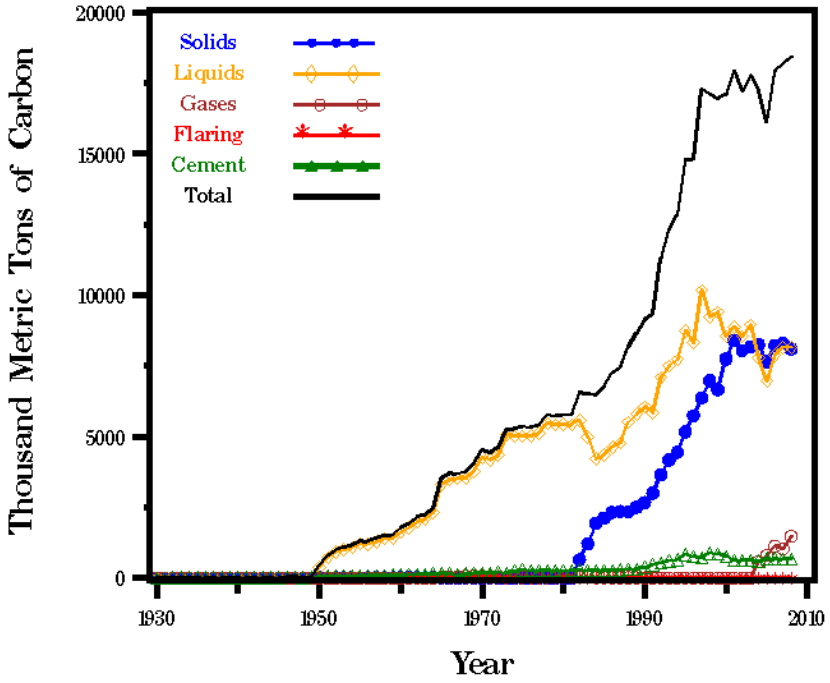
Table 1.1 *Summary of GHG inventory (CO_2eq)*

(Thousand Tons unless stated otherwise)	1996	2000	2003	2004	2005	2006	2007
TOTAL	62,705	72,439	72,136	72,691	73,296	74,641	76,854
Tons per capita	11.03	11.52	10.78	10.68	10.58	10.58	10.70
Tons per GDP (2005 US Dollars PPP)	0.52	0.50	0.49	0.47	0.45	0.44	0.43
Carbon Dioxide (CO_2)	51,862	61,007	63,841	63,888	64,026	65,092	67,061
Methane (CH_4)	8,945	9,226	5,690	6,068	6,534	6,781	6,842
Nitrous Oxides (N_2O)	1,897	2,206	2,606	2,735	2,737	2,767	2,952

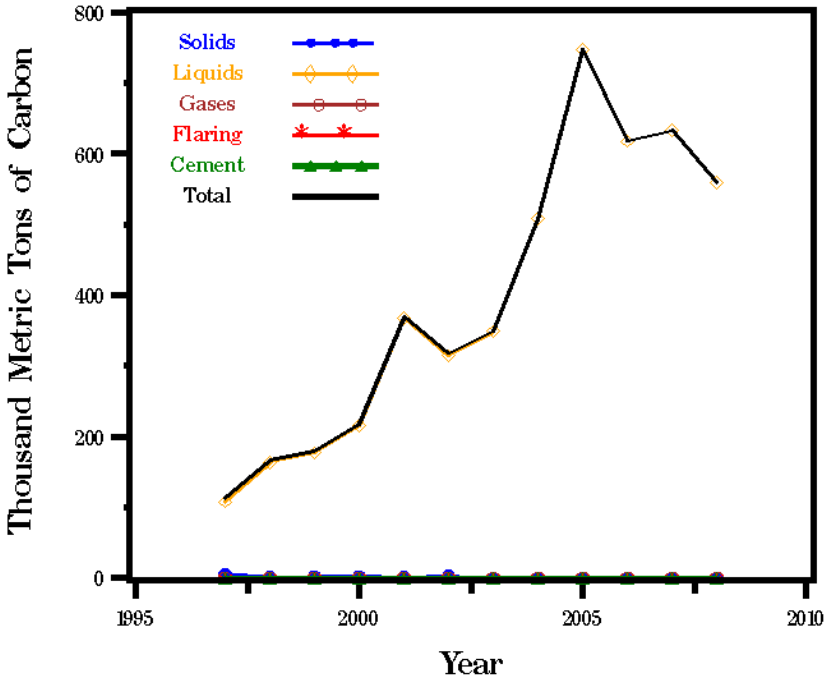
Source: CBS and Jean Koch et al

6.3. Changes in CO2 Emissions per Capita in Israel & POT (1950-2010, 2997-2006)

Per capita CO_2 Emission Estimates for Israel
Source: US Department of Energy (2015)



Per capita CO_2 Emission Estimates for the Occupied Palestinian Territory. Source: US Department of Energy (2015)



6.4 Climate Change Performance & Projection

- According to US-DoE, Oak Ridge C02 emissions per capita were rising for Israel above the global, regional and OECD average
- **Unclear whether emissions from Jewish settlements in West Bank were included in US estimates (and where for Israel or for POT)**
- Although the Middle East experienced a very high climate variability during the **Holocene, the CO2 emissions increased above average.**
- **Due to realist mainstream the adopted security concept in Israel was narrow (national, military, territorial): climate change & security: no political concern!**
- **Jordan** (member of Human Security Network) **used a widened security concept** (human, water, health, food security)

Little debate on climate change & security in Israel & Palestine except:

- Ecopeace: http://foeme.org/www/?module=projects&record_id=144
- **FoEME: Climate Change: A Real Threat to Middle East Security <>**
- **Eran Feitelson - Abdelrahman Tamimi- Gad Rosenthal: Climate change and security in the Israeli–Palestinian context, in: JPR 2012, 1, 241-257**
- Waxman, J. et al. 2015. A Water and Energy Nexus as a Catalyst for Middle East Peace. International Journal of Water Governance 1 (2015) 71-92.

7. Need for Long-term transformative changes towards a long-carbon economy

G-7 Meeting in Elmau, 7-8 June 2015: Leaders' Declaration

The agreement should enhance transpa-rency and accountability including **through binding rules at its core** to track progress towards achieving targets, which should promote increased ambition over time. **This should enable all countries to follow a low-carbon and resilient development pathway in**

Mindful of this goal and considering the latest IPCC results, we emphasize that **deep cuts in** GHG emissions are required with a **decarbonisation of the global economy over the course of this century**. Accordingly, as a common vision for a global goal of GHG emissions reductions we support sharing with all parties to the UNFCCC the upper end of the latest IPCC recommendation **of 40 to 70% reductions by 2050 compared to 2010** recognizing that this challenge can only be met by a global response. We commit to doing our part to achieve **a low-carbon global economy in the long-term including developing and deploying innovative technologies striving for a transformation of the energy sectors by 2050 and invite all countries to join us in this endeavor.** To this end we also commit to develop **long-term national low-carbon strategies.**

7.1 Towards Proactive Initiatives for Peace and Sustainability Transition

Whether climate change resulted in international, national and human security impacts and triggered migration and conflicts is **disputed**.

The **IPCC concluded** on **climate change impacts on human security**:

- *Climate change will have significant impacts on forms of migration that compromise human security (high agreement, medium evidence)***.**
- *Mobility is a widely used strategy to maintain livelihoods in response to social and environmental changes (high agreement, medium evidence***)**.
- There is insufficient evidence to judge the effectiveness of resettlement as an adaptation to climate change. *Some of the factors that increase the risk of violent conflict within states are sensitive to climate change (medium agreement, medium evidence)***.**
- *People living in places affected by violent conflict are particularly vulnerable to climate change (high agreement, medium evidence).*
- *Climate change will lead to new challenges to states and will increasingly shape both conditions of security and national security policies (medium agreement, medium evidence)***.**

8. Relevance for Middle East: National security & Hobbesian security strategies prevail on defence of the nation state, territory, people & system of rule?

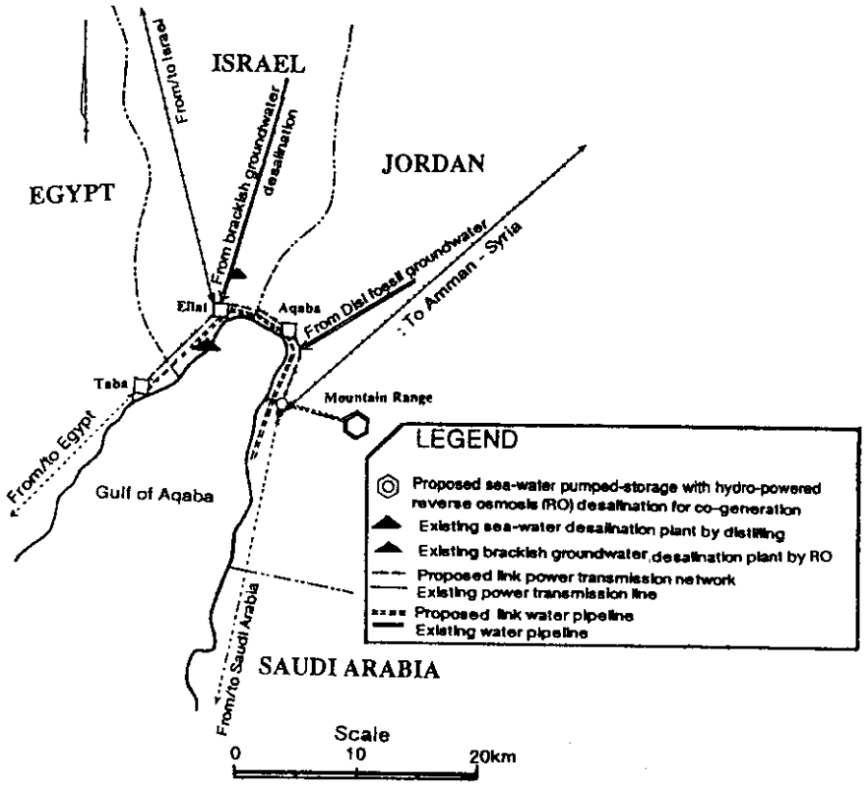
- While **climate variability** has severely affected the ME and NE during the Holocone (Issar/Zohar), **anthropogenic climate change** is projected to have severe impacts on the MENA region and on the NE in particular.
- In most ME & NE countries the **awareness of, concern about & willingness to deal with climate change impacts & to accept national obligations is low**.
- **Premodern security interests are rising through ISIS in Syria & Iraq (Califate).**
- **Reconcept. of security has not occurred in Israel, Palestine, Egypt, Lebanon** (except in Jordan where there has been a discussion on human security)
- **National security is primarily conceived as a military security issue where intelligence, military, political and economic tools and interests prevail.**
- **Post-modern EU concept of a deterritorialization of security is utopian in NE:**
  - Israel has extended its settlements in East Jerusalem and in the West Bank
  - Palestine aims at national independence with full sovereignty (including right to defence)
- **The discourse on both human security & CC & security has been peripheral.**
- **Decarbonization of the economy and its energy sector not yet a key priority**

9. Thought experiment in Anthropocene: Common threat to survival for Israelis & Arabs: 'Sustainability' as a common goal of 'environmental peace-making' & 'peace building?

- **Political prospects for the realization of such a thought experiment have been low in the Middle East and they have further declined since 2004 for many reasons:**
- I presented this thought experiment at 2nd Israeli-Palestinian international Conference on Water for Life in the Middle East in Antalya in October 2004 (Shuval/ Dweick: ***Water Resources in the Middle East***, Springer 2007) Hex. II,ch. 37: 357-78.
- And I developed it further for a NATO conference vol. based on a conference in Eilat (April 2004): „Potential of Solar-Thermal Desalination to Defuse Water as a Conflict Issue in the Middle East: Proposal for a functional cooperation in the gulf of Aqaba", in: Morel/ Linkov: ***Environmental Security & Environmental Management,*** Springer 2006: 25-48.
- At the suggestion of Lord Giddens I sent these proposals to former PM Tony Blair when he was the EU representative for the Peace Process in the Middle East.
- The paper was received but not surprisingly it was not taken up.
- **This was the end to a thought experiment whose time has not yet come and may never come, at least in the near future.**
- **Encouraged by similar ideas by our colleauges from Ecopeace (Friends of the earth of the Middle East only cross-borfder organization for 21 years).**

9.1. Thought experiment for a cross-border 'sustainability experiment' for Gulf of Aqaba

- **H.G. Brauch:** Impacts of Global Environmental Change for Water Resources of Israel and its Neighbors: New Security Dangers and Shifting Perceptions (2007)
- **H.G. Brauch:** Potential of Solar-Thermal Desalination to Defuse Water as a Conflict Issue in the Middle East: Proposal for a functional cooperation in the gulf of Aqaba



5. Perspective for Functional Cooperation of Water, Energy, Desalination and Food Experts

5.1. Setting up of a Research Centre on Regional Impacts of Global Change

5.2. Towards a Joint Graduate Technical Univ. of the Gulf Of Aqaba

5.3. Steps for Functional Cooperation in Addressing Common Environmental Challenges

6. Recognising Common Challenges and Potential for Functional Cooperation Responding to New Common Threats

While the donors should attach clear conditions on their support of cross-country functional cooperation in the region the recipients should be persuaded to accept the support without political links to the prior realisation of their respective "big dreams" for a prior peace settlements that only serves their own "national" or community interest.

9.2. Functional Cooperation: Solar Desalination for Egypt & Gaza

- **Step 1: Bilat. cooperation between Egypt & PNA on fossil & renewable desalination**
- **Assessment of water needs & technological and economic feasibility study**
- **Goal: Research & development in Sinai on solar thermal desalination infrastructure for Sinai and Gaza**
- **CDM: as a tool for attracting foreign invest-ments in the framework of the Kyoto mecha-nisms (Egypt to sign the Kyoto Protocol)**
- **Pilot Project: Capacity Building: Euro-Medi terranean R & D Facility for hybrid desalina-tion with gas and solar thermal energy**
- **GEF and international donor community, incl. Arab Development Funds: Pilot projects**
- **Goal: Establishment of a major desalination plant in Sinai at the Egyptian border to Rafah.**
- **Contribute to Water & Health Security in Gaza**

9.3. Functional Arab-Israeli Cooperation: Solar Desalination for Egypt, Gaza & the Negev

- **Step 2: Cooperation with Middle East Des. Res.Cent. (MEDRC) of Arab & Israeli Institutes on Desalination Technologies**
- **Feasibility Studies on the Development of trilateral gas & solar thermal electricity & desalination plants for water needs of Sinai, Gaza & Negev.**
- **Sponsors: GEF, EU, USAID, WB, IMF, EIB, Japan, Arab Gulf countries etc.**
- **Reduce reliance on water from Lake Tiberias/Kinneret for greening the Negev.**
- **Goal: Trilateral functional community for developing a joint integrated infrastruc-ture for peace, with vital components in Sinai, Gaza and in the Negev to enhance water and food security.**

9.4. Functional Arab- Israeli Cooperation:

Water for the Jordan Basin: Solar Desalination in the Gulf of Aqaba for Egypt, Jordan, Palestine & Israel

- **Step 3: Address the global environmental challenges affecting all countries**
- **Assessing water needs & technological potentials: Economic feasibility study**
- **Desalination infrastructure in Jordan for the West Bank in the Gulf of Aqaba and water pipelines on Jordanian territory**
- **GEF: Pilot projects**
- **CDM with EU countries: foreign investments in framework of Kyoto Prot.**

9.5. Functional Cooperation in Gulf of Aqaba

- **Three Partners entered into peace treaties: Egypt – Israel – Jordan; plus Saudi Arabia and Palestine.**
- **Building on existing foundations**: cooperation of water & food specialists
- **Model:** Creating **regional interdependence** that requires daily cooperation
- **Comp. 1: Research** on common challenges for the region: Possible tasks for a new **Research Centre** in **Taba, Elat and Aqaba**
- **Comp. 2:** Creating **renewable energy**
- **Comp. 3:** Schemes for **desalination**
- **Comp. 4**:**Sustainable food** production
- **Comp. 5: Sustainable tourism**
- **Comp. 6: New urban environments**.

9.6. Creating a Knowledge Infrastructure for Functional Cooperation in the Gulf of Aqaba

- **Initial Countries**: **Jordan (Aqaba), Egypt (Taba), Israel (Elat)**
- **Partners**: **Palestinian Authority and possibly Saudi Arabia**
- **Sponsors: EU, USA & Japan, WB, IMF, EIB; Facilitator: UN**
- **1st Step: Problem Recognition & Creation of Awareness: Centre on Regional Impact of Global Envíronmental Change to Mitigate Environmental & Human Security Risks**
- **2nd Step: Creating the Knowledge Basis for Mitigation: International Technical University of the Gulf of Aqaba with international departments and faculty in Taba, Elat, Aqaba**
- **3rd Step: Setting up a tri-national integrated infrastructure**

➢ **Taba: Centre and Laboratory on Renewable Energy: solar & wind (EU)**

➢ **Elat: Centre on Agriculture in Arid Regions in cooperation with with DRI (Egypt) & Blaustein Institute on Desert Research (Israel) (US)**

➢ **Aqaba: Centre for Hydrology and Desalination (Japan)**

9.7. Coping with Water & Food Scarcity: Framework Instruments for Long-term Conflict Avoidance

- **4th Step: Supplying Fossil & Renewable Energy**
  - **Fossil Energy: Natural gas from Egypt and oil from Saudi Arabia**
  - **Renewables: Exploit solar thermal and photovoltaic energy, wind power**
  - **Long-term: Create a joint infrastructure for a local hydrogen economy**
- **5th Step: Cooperative Mitigation of Water Scarcity**
  - **Joint training institution for water experts on water efficiency**
  - **Build joint water desalination plants to serve all three countries**
- **6th Step: Creating New Jobs & Supplying Food**
  - **Joint research and training institution for agriculture, irrigation, and desertification specialists for arid regions (e.g. in cooperation ICARDA)**
  - **Centres for IT, computer, software industry**
- **7th Step: Build New Sustainable Cities & Tourist Centres**
  - **Develop sustainable tourist centres based on renewable desalination**
  - **Develop sustainable cities with a low emission transport system. solar cooling and energy generation, waste based electricity generation**
  - **8th Step: Create a Pride in Joint Achievements & a Culture of Tolerance**

10. Peacebuilding by Functional Environmental Cooperation - Addressing Regional Impacts of Global Environmental Change

- Multilateral frameworks for post-conflict environmental reconstruction
- Functionalist credo: form follows function: start with functional cooperation in areas population supports: water, environment, health, food
- Shift focus from narrow military to a wider human security concept
- Recognise the mutual challenges to survival (Awareness creation)
- Start with collaborative research that address these joint challenges.
- Establish joint scientific and technological capacities in the region
- Use energy potential of deserts for its greening & change of climate
- Develop scientific, environm. & econ. partnership building measures
- Potential spill-over from functional cooperation to conflict resolution.
- Develop confidence-building measures for political and military realm .

10.1. Beyond the Hobbesian Security Dilemma

- **Middle East Conflict: a Permanent Conflict?**

❖ **Continued asymmetric cycle of violence will not produce peace but hatred**

- **Learning the Lessons from Successful Peacebuilding**

➢ **Overcome the traditional Hobbession worldview and popular mindset**

- **Maintain, create and develop regional functional networks**

✓ **Of water managers & energy and food specialists & sustainable urbanisation experts**

- **Build common institutions**

➢ **Gulf of Aqaba: regional laboratory for a joint regional development**

➢ **Start with education and expand to the economic sector, political spill-over.**

- **Look for common strategies for „human survival“**
- **Problem solution requires a „new thinking“/new security concepts**

10.2. Conclusions: Window of Opportunity?

- **Preconditions for Consideration of these Conceptual Ideas**
  - Return to the Multilateral Peace Process with the Working Groups: Regional Economic WG: EU; Water WG: USA; Environmental WG: Japan or to a new structure.
- **Conditionalised Support by the Donor Community**
  - The Marshall Plan aid was conditional on the cooperation among recipients!
  - Strong unified strategy of all donors and equal treatment of all recipients.
  - Grant and credits would be conditional on the development of multilateral regional functional infrastructures with a premium for cooperation and sanctions for violation that would hurt the violator with the suspension of assistance.
- **Preparation during Conflict: Step-by-Step Implementation**
  - The conceptual ideas for multilateral functional projects should be developed by joint functional teams of scientists from the three countries & Palestine
  - The multinational NGO planning process should be supported by the EU in the Framework of the Euro-Mediterranean partnership or its new foundation.

10.3. Proposal to contribute to the small hope

NETWORK TO DEVELOP FEASIBLE FUNCTIONAL CONCEPTS

- **Functional perspective** may appear unrealistic due to experience & lack of trust. After WWII, ideas of **Marshall & Monnet** or those of **Gorbachev** were perceived by some as dreams and by others as propaganda.
- **My initial operational proposal is very modest:**

1. A group of **functional (water, soil, food, energy) experts from Egypt, Israel, Jordan & Palestine** may be formed with experts from Europe, Japan and North America. This group should look for funding for meetings and research.
2. These experts should explore areas where functional cooperation among experts in the region exists, where it is possible and needed to address future challenges.
3. **These experts should be asked to develop a priority list of concrete proposals for functional cooperative projects that appear to be feasible at present.**
4. These experts should ask private foundations for seed money to develop concept or pre-feasibility studies most promising proposals for **functional** cooperative projects.
5. These experts should present feasibility studies to internat. donors & foundations.
6. **Friends of the Earth of Middle East have made proposals in this regard during this workshop and in several publications.**

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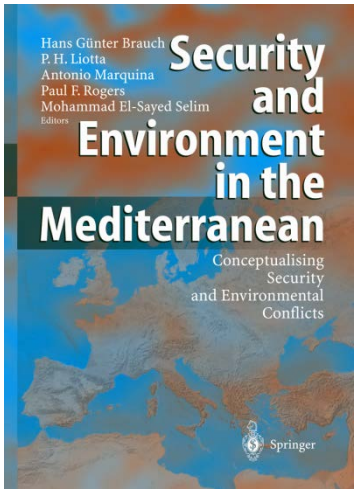

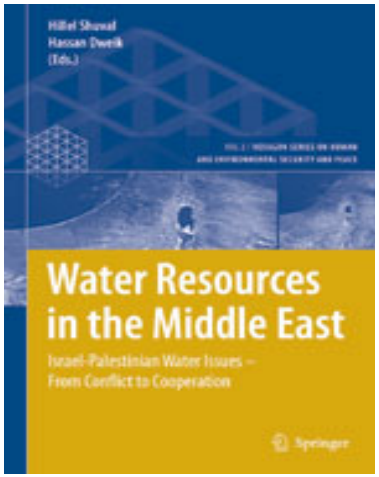

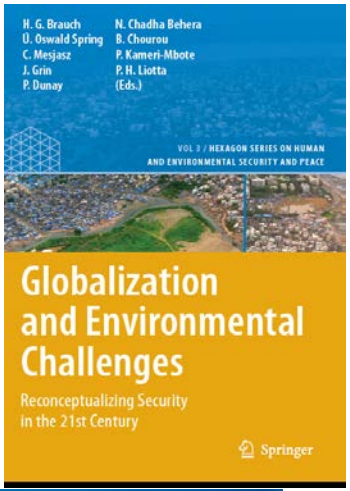

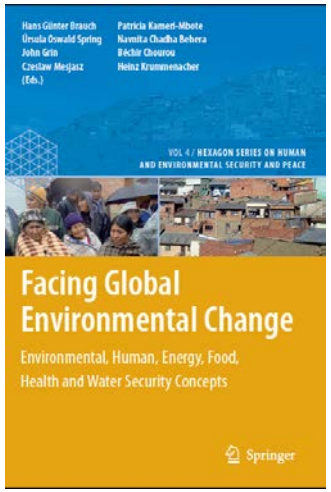

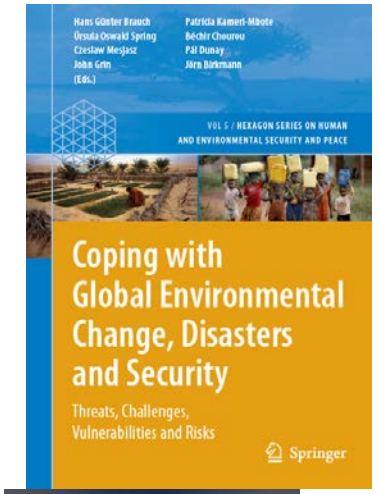

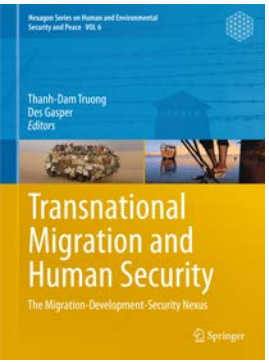

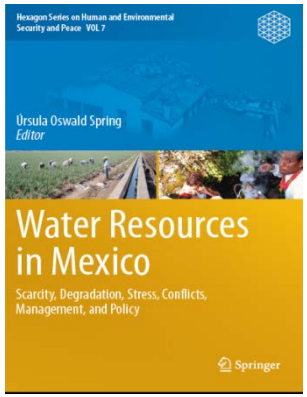

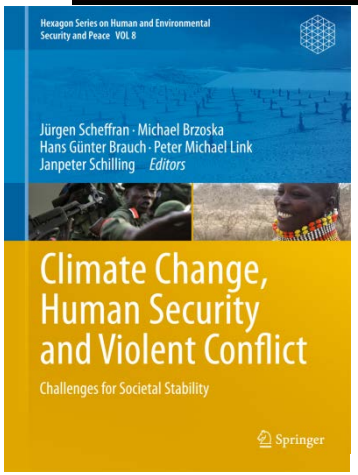

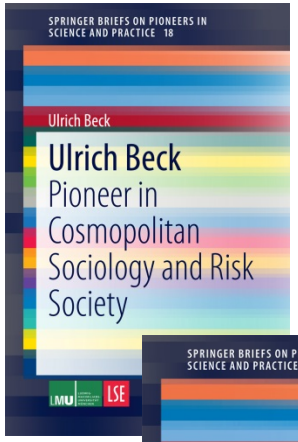

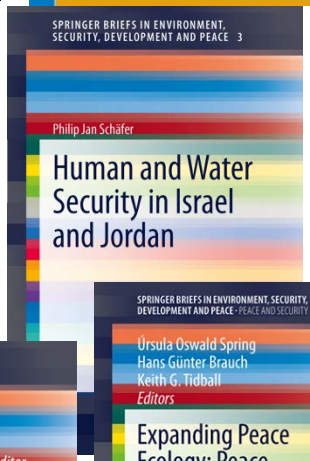

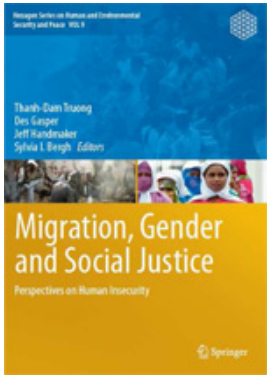

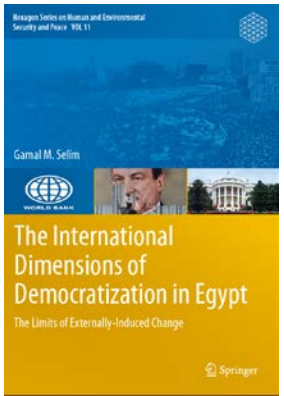

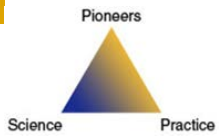

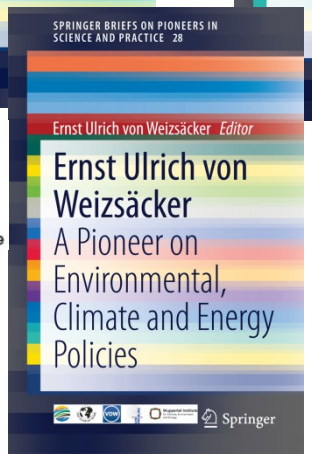

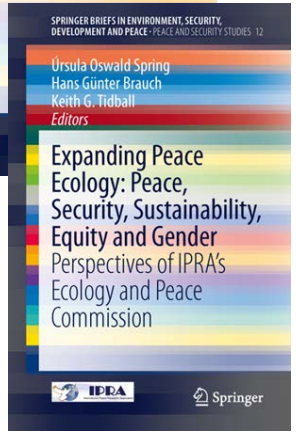

Forthcoming Vol.:

Vol. 10: Brauch, Oswald Spring, Grin, Scheffran Eds.): *Sustainability Transition & Sustain-able Peace Handbook*