



**Department of Geography &  
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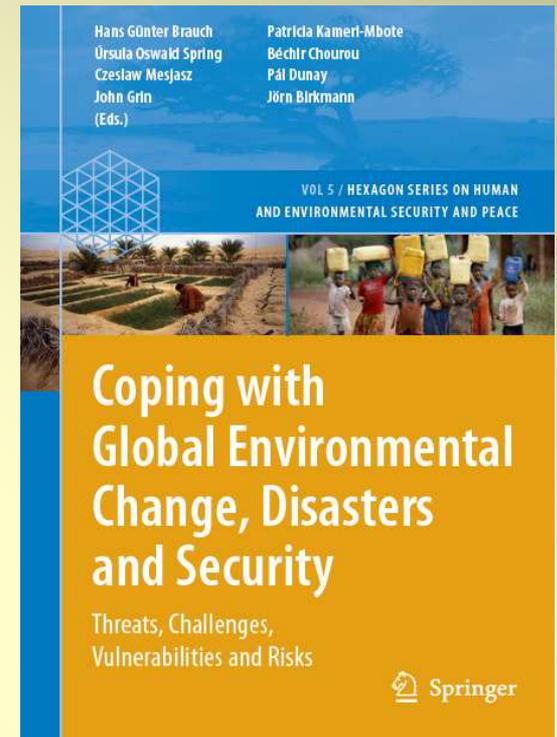
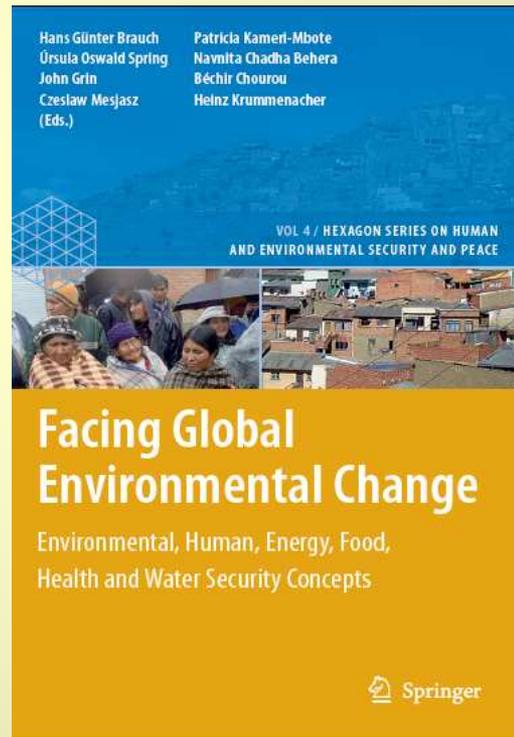
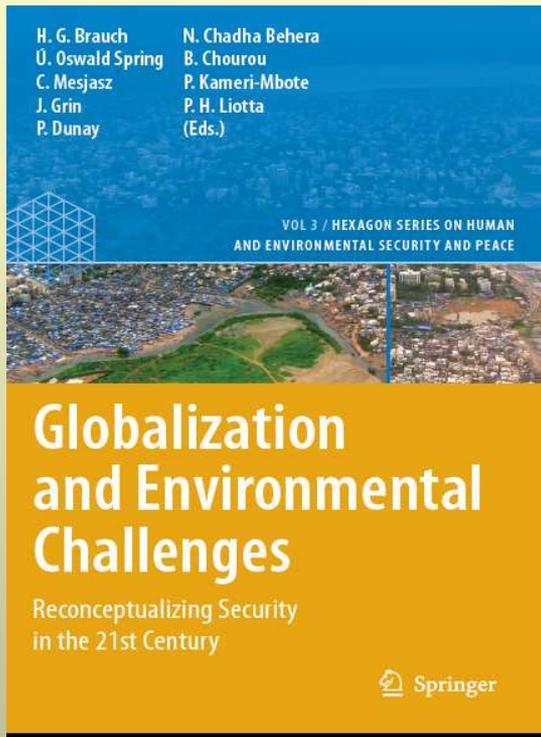


# **Towards a Fourth Sustainable Revolution**

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# Acknowledgements

This talk is based on the three Handbook on  
**Reconceptualizing Security in the 21st Century :**



This chapter was coauthored with Hans Günter Brauch, Free University of Berlin, Germany “Coping with Global Environmental Change – Sustainability Revolution and Sustainable Peace”, in: Brauch et al. (eds., 2009). *Coping with Global Environmental Change*: 14875-1504.

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# 1. Hobbes and the Business-as-usual Approach

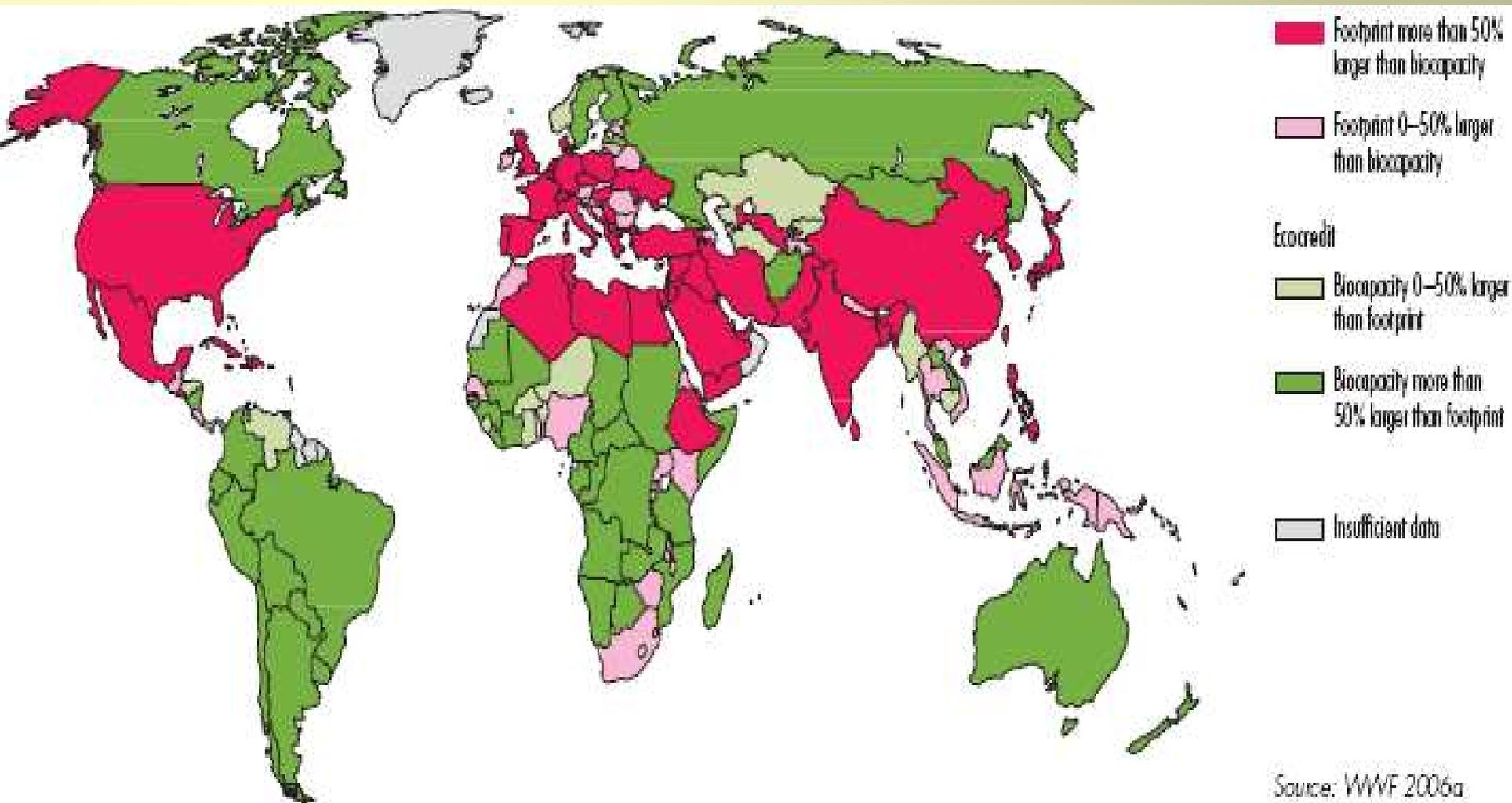
## Global and Systemic Crisis:

- Financial-economic debacle: rescue over 27 trillions USD
- Population growth: 8.5 to 9 billion people
- Climate change: 2 to 6.5° C?
- Urbanization and slum development: over half of world population
- Employment and poverty: 5 billion poor people
- Environmental deterioration: bio-debt, environmental services loss
- Water security: 1.1 billion without water; 2.4 billion without sanitation facilities
- Food, obesity and famine: 1 billion hungry, 4 billion are overweighed
- Health threats: each second person in the USA will get cancer; 90% of illnesses related to water and polluted environment
- Psychological disorders, depression, anxiety, aggressions
- Gender violence: each 3 women is beaten; each 5th is raped
- Conflicts, violence and social disorders: terrorisms, fundamentalism, resource-related wars, internal disputes about goods, international conflicts on crucial natural resources (oil, rare materials, water, land)

# Overexploitation, bio-capacity and bio-debt



# Bio-capacity and bio-debt



# Potential Tipping points

- Now scientific attention has shifted to **chaotic processes such as a nonlinear and abrupt climate change**. Once linear processes cross certain thresholds they may result in fundamental contextual changes, as, for example, the shutoff of the Gulf Stream, the collapse of the Amazon rain forest, the ENSO cycle or the change of the Indian monsoon. These chaotic changes have recently been conceptualized as '**tipping points**' that may fundamentally change the linear projections.

# ***Fourth Sustainable Revolution***

## **Sustainable Development with Sustainable Peace**

### Revolutions

- ***Agricultural:*** 7,000-10,000 years ago: human settlements and Holocene
- ***Industrial:*** from 1750: urbanization with massive use of fossil energy
- ***Technological-Communicative:*** 1950: Globalization, GEC in the Anthropocene
- ***Sustainable Revolution:*** 2020-2050: Decarbonization, Dematerialization and HUGE

# ***Elements for a Fourth Sustainable Revolution***

- 1. Culture**
- 2. Worldview**
- 3. Mindset**
- 4. Governance**



# Culture

- is a globally organized way of life based on values, norms, beliefs, institutions and productive processes including the development of science and technology
- is transmitted from generation to generation by formal and informal processes
- is a learning process which includes acculturation and enculturation
- not based on natural laws but socially constructed: interests maintain and reinforce structures of power and mechanisms of control
- is so deeply internalized that it is perceived by most persons as natural
- cultural products are shared by members of a society; they link people together due to identity patterns and social representations
- cognition process legitimized deep structures of beliefs and behavior of complex relationships, interdependence between progressive destruction of natural - human systems
- individual/ social actors, institutions, regimes, and worldviews require fundamental change from cornucopian view to complex and sustainable biological-human system.

# Worldview



# Worldview

***Worldview* refers to a world perception, ideas and beliefs through which people interpret and interacts with the world.**

1. an *ontology* (descriptive world model)
2. an *explanation* (how is it functioning)
3. a *futurology* (how should it be)
4. *values* (how will it be achieved)
5. a *praxeology* or a theory of action on how we should attain our goals (what should we do)
6. an *epistemology*, or a theory of knowledge on what is true and false (what are the underlying processes)
7. an *etiology* or a constructed worldview with an account of its own building blocks, origins and construction (Aerts, Apostel, De Moor, Hellemans, Maex, Van Belle and Van der Veken, 1994).
8. cognitive orientation of a society, its values, emotions, and ethics (Palmer, 1996: 114)

# Mindset

- Includes fixed mental attitudes predetermining person's or group's responses to interpretations of situations by referring to different patterns of perceiving and reasoning.
- 'Cultural lenses' that filter view of and reaction to the world (Fisher, 1997).
- Solution: over-coming deeply ingrained constraints cannot be solved by convenient technical fixes, it requires **deep and radical changes** in own and societal aspirations and consumption patterns, those of business community, governments and international organizations.



# Governance

“the complex of formal and informal institutions, mechanisms, relationships, and processes between and among states, markets, citizens and organizations, both inter- and non-governmental, through which collective interests on the global plane are articulated, rights and obligations are established, and differences are mediated”.

(Weiss and Thakur, 2010)



# **Obstacles Impeding the Change**

**1. Patriarchal Culture**

**2. Mental Obstacles: Old  
Worldviews and Mindsets**

**3. Short-term Interest-driven  
Opposition**

**4. Deficient Governance  
Processes**



# Patriarchal Culture

- Patriarchy refers to a **social** hierarchical, violent and exclusive **organization**, creating systematic domination of women, children, poor and other men by authoritarian leaders and elites.
- Patriarchy created over five billion excluded without access to basic needs.
- Religious patriarchy is obstacle to cross-gender solidarity (Judaism, Hinduism, Christianity, Buddhism, Islam). Religious structures are results of power interests driven by human decisions and not by divine law.
- Gender studies marked **patriarchy** by the **supremacy of a male** figure, and **subordinating women**, children & genders or bodies who defy traditional man/woman dichotomization.
- Patriarchy, market-based capitalism and neoliberalism driven by a profit & greed destroys Earth System and humankind.

# **Mental Obstacles due to Old Worldviews and Mindsets**

- With regard to the 'Fourth Sustainable Revolution' culture, worldview and mindset refer to a discussion of a **post-carbon society**, where **solidarity, equity, and social justice** are key drivers instead of the maximization of profits and the destruction of the Earth without thinking of the **next generations** or of the collapse of **ecosystems**.

- **Includes a fixed mental attitude or disposition that predetermines a person's responses to and interpretations of situations by referring to different patterns of perceiving and reasoning.**
- **Overcoming 'cultural lenses' that filter our view of and reaction to the world.**
- **These deeply ingrained constraints cannot be solved by convenient technical fixes but requires much deeper and radical changes in our own aspirations and consumption patterns and those of civil society, the business community, and finally also those of our governments and international organizations**

# Mindset & Fourth Sustainable Revolution

Mindset of key decision-makers that were expressed by:

- a) the ***lack of will*** to take the challenges posed by climate change seriously;
- b) the prevailing *thinking in terms of **short-term**, often **selfish**, national, state, local community and individual interests* that have put the climate change challenge down on the individual national and global priority list;
- c) the ***lack of readiness for a global climate deal*** based on the “common but differentiated responsibilities” (Art. 4,1,UNFCCC) and the lack of thinking in terms of common obligations based on intrinsic relation between nature and humankind sharing the global resources.



# **Obstacles to the Fourth Sustainable Revolution**

# Short-term Interest-driven Opposition

- For major industrialized countries **no price was too high** to bailout consequences of the **global financial crises** since 2008. At COP 16 in Cancun, they were not willing to treat climate change as an issue of 'utmost importance' nor to commit even **less than one per cent of their bailout costs** of the global financial crisis for a global fund to assist developing countries in coping with the impacts of global climate change.
- Since 2007 industrialized countries were unwilling to commit significant **food-aid and financial resources** to counter the hunger of 1 billion people.
- Many of the same countries have used food crops for **biofuels**, creating an **artificial scarcity** of food commodities that resulted in major food price hikes (partly also due to **speculation**). They have also spent much more in **subsidizing ethanol** and biodiesel than would have been needed to launch a strategy for **combating hunger**.

# Deficient Governance Processes



- The prevailing Hobbesian mindset of political-military elites
- **power concepts, strategic rationales, and military instruments** (armed forces, weapons, intelligence)
- different security dangers: **not any longer ‘them’** that poses the threat **but ‘us’** due to our **fuel-intensive mode of production and consumption patterns** where the externality of the costs have been ignored far too long.

# Towards the Vision of a Global Sustainable Transformation



- **Natural sciences** have not taken into account the political dimension and the emerging thinking in the social sciences (postmodern approaches, risks thinking, complex emergency, social vulnerability, DRR)
- **Social science** forgot GEC, natural hazards, ecosystem management and environmental security
- An isolated approach from the natural or social science alone will **not be able to develop the required revolutionary changes** in thinking & policy
- Therefore, a 'Fourth Sustainable Revolution' includes **changes in material and immaterial processes, beliefs and behaviours**, including power relations and control mechanisms with participative governance. Humans are part of the Earth System and not their owners.



# Why a FSR?

- 'Fourth Sustainable Revolution' after the agricultural, industrial, and communication revolutions is a **huge undertaking**
- is **necessary** due to human interventions and alteration in the Earth System
- **deep changes** in the Earth System has inescapable natural, social and political consequences
- **future is unpredictable** with complex interrelations humankind may face and will have to cope with during the Anthropocene
- 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**.

# **‘Fourth Sustainable Revolution’**

- launch the transformation from the dominant vision of business-as-usual towards a **sustainable vision in a multilateral cooperative** world.
- Climate change poses primarily challenges for **human and international security** that can only be overcome by human ingenuity. However, COP 15, 16 have shown that **key mental, economic and political obstacles** must still be overcome to prevent the security dangers referred above from triggering violent conflicts during this century.

# Participative governance

- In the context of the 'Fourth Sustainable Revolution' participative governance is needed combining processes of policy initiation and adoption (**bottom-up**) and the implementation of the required fundamental transformations (**top down**). This requires peaceful negotiation processes based on diversity and tolerance.
- Moving towards the vision of a sustainable peace with human security requires **overcoming the Hobbesian obsession of a militarization** of the climate change impacts for national security and working globally for changing dominant worldview.

# **Furture Generations at Risks**



# Goals of FSR

Goal of a global average increase of temperature of **2 °C by 2099** , through:

- a) **enhanced energy efficiency**, a shift towards renewables and a gradual dematerialization and decarbonization of the economy
- b) **ecosystem recovery** and restoration to maintain environmental services
- c) integrated **water** basin management, rain harvesting, providing safe water, sewage facilities (including recycling and reuse), enhancing irrigation efficiency and substitution with less water demanding plants
- d) combating **soil** erosion, degradation and desertification by integrated waste management, composting of organic **waste**; terracing, restoration of salinized and degraded soils, recovery of soil fertility by crop rotation
- e) changes in our 'ways of life' and '**lifestyles**' by changing meat-intensive diets to vegetarian **food** (food culture)
- f) reduction of advertisements for a **consumerist waste economy** and of individual demand for non-essential goods and enhancement of intellectual and spiritual aspirations possibly leading to a new modesty
- g) **political reforms of democratic governance** to enhance longer-term orientations over short-termism, proactive over reactive policies.

# International obligations for FGR

International and peace community must take bold action:

1. on **climate change mitigation** to avoid an intensification of security threats to human well-being;
2. provide support to climate change **adaptation in developing countries** through investments in capacity building on water management, food security, agricultural resilience, and public health systems to deal with increased disease incidence and risk;
3. **disaster prevention**, preparedness and response, early warning systems for various climate change impacts
4. redouble its efforts for **sustainable and equitable development** through development assistance, sustainable economic growth, financial and technological support towards a low-carbon path
5. **anticipate and prepare for unprecedented challenges** beyond existing mechanisms
6. support **climate-induced displacement and migration** beyond existing legal protective regimes ( 'statelessness' of citizens of SIDS and impacts on sovereignty, claims over marine resources, and rights and relocation of their citizens);
7. **water scarcity and stress** for millions due to melting of glaciers and snow pack
8. competition over newly accessible **Arctic** natural resources and trade routes



**Sustainable Development, Participative  
government & Peace: a Human, Gender  
and Environmental Challenge,  
a HUGE Security Process**

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