Sustainable Peace during a Sustainable Transition Process

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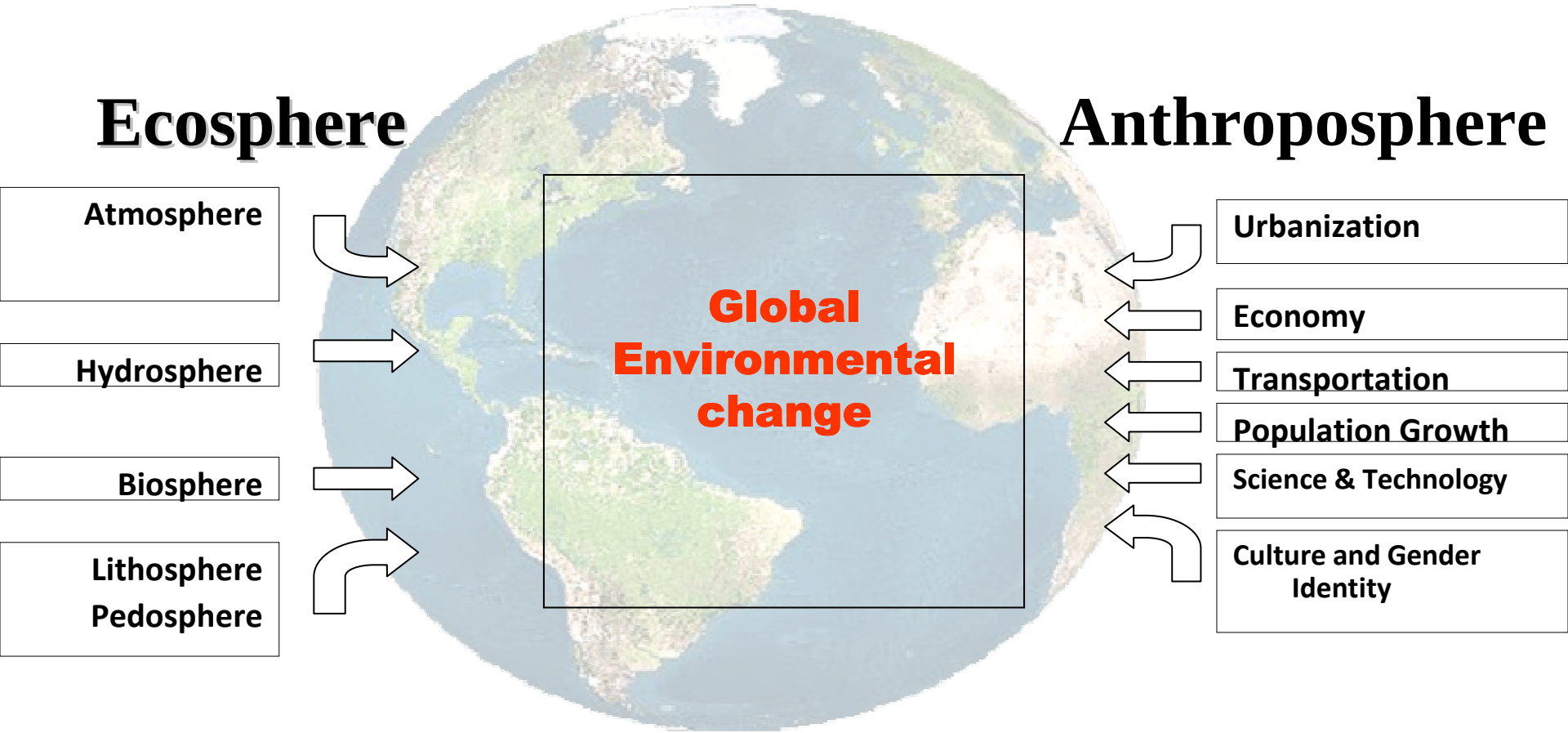
Content

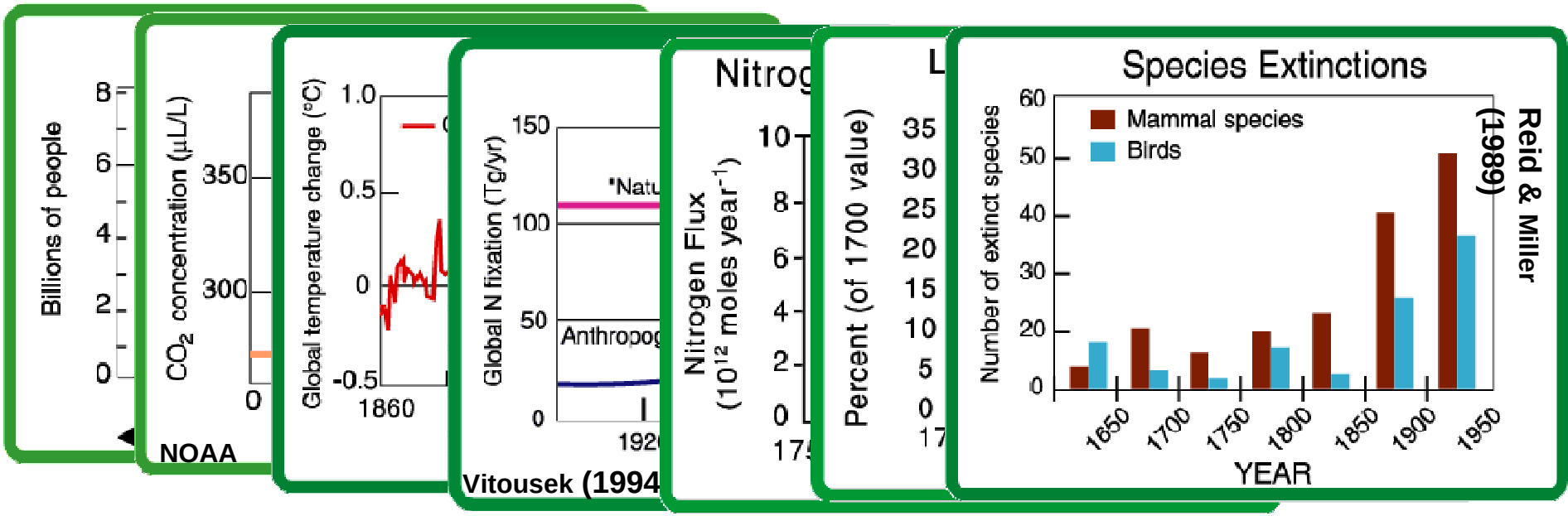
1. Global environmental change threats
2. New scientific questions
3. Transdisciplinary links: sustainability, development, peace and security
4. What will limit the relation between peace and sustainability (industrialization of warfare)
5. What will extend and deepen the relation-ship between sustainability and peace

Global Environmental Change (GEC)

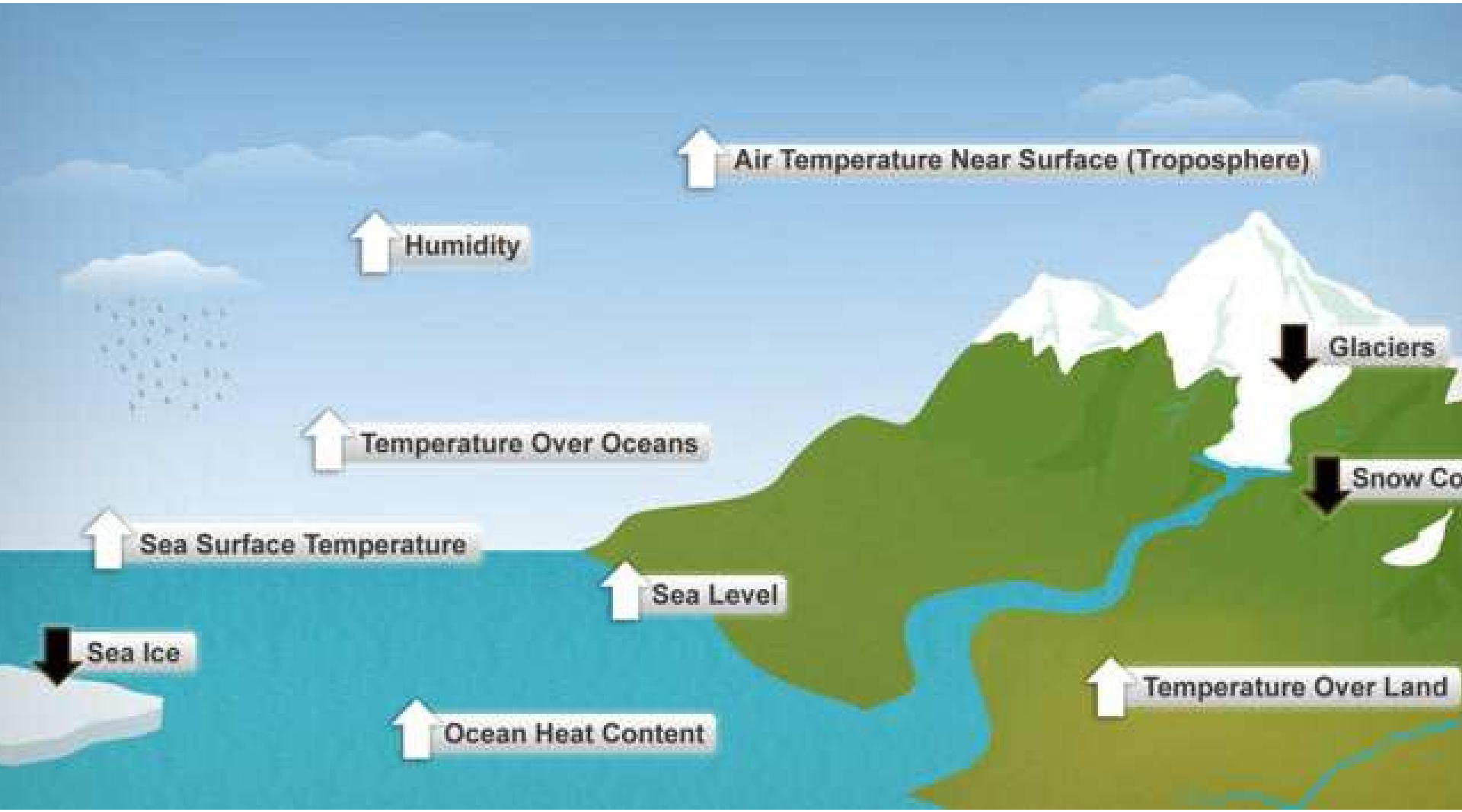


What is global environmental change?

- GEC is more than climate change
- Includes natural components **plus** human ones
- Is a constelation of changes in different domains, such as:



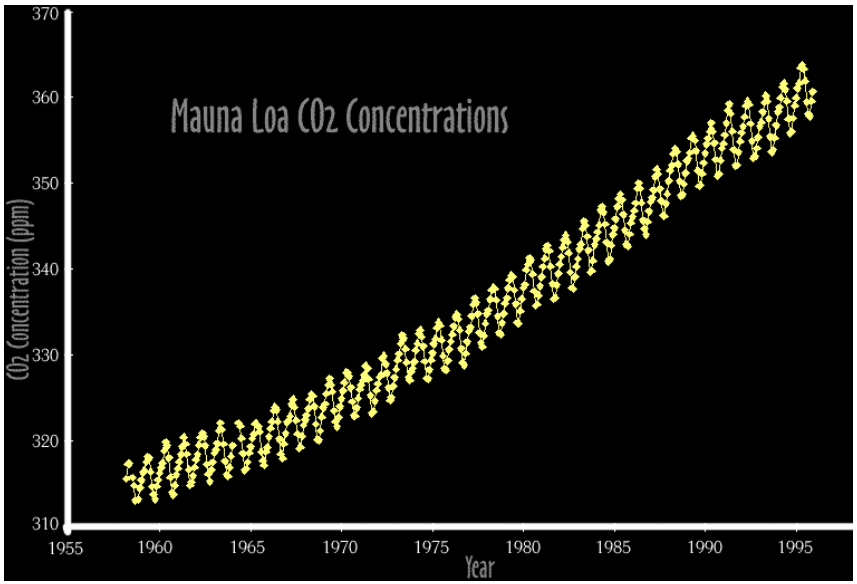
Global Warming and climate change

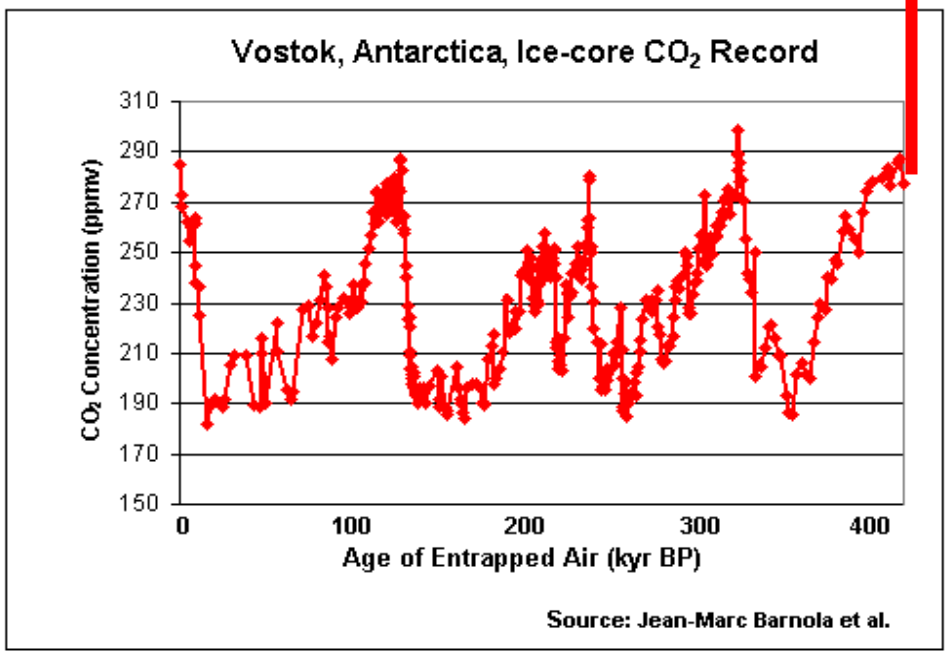


Atmospheric Concentration of CO2

With 90% of confidence global warming in the 20 centuries is due to the increase of anthropogenic green house gases

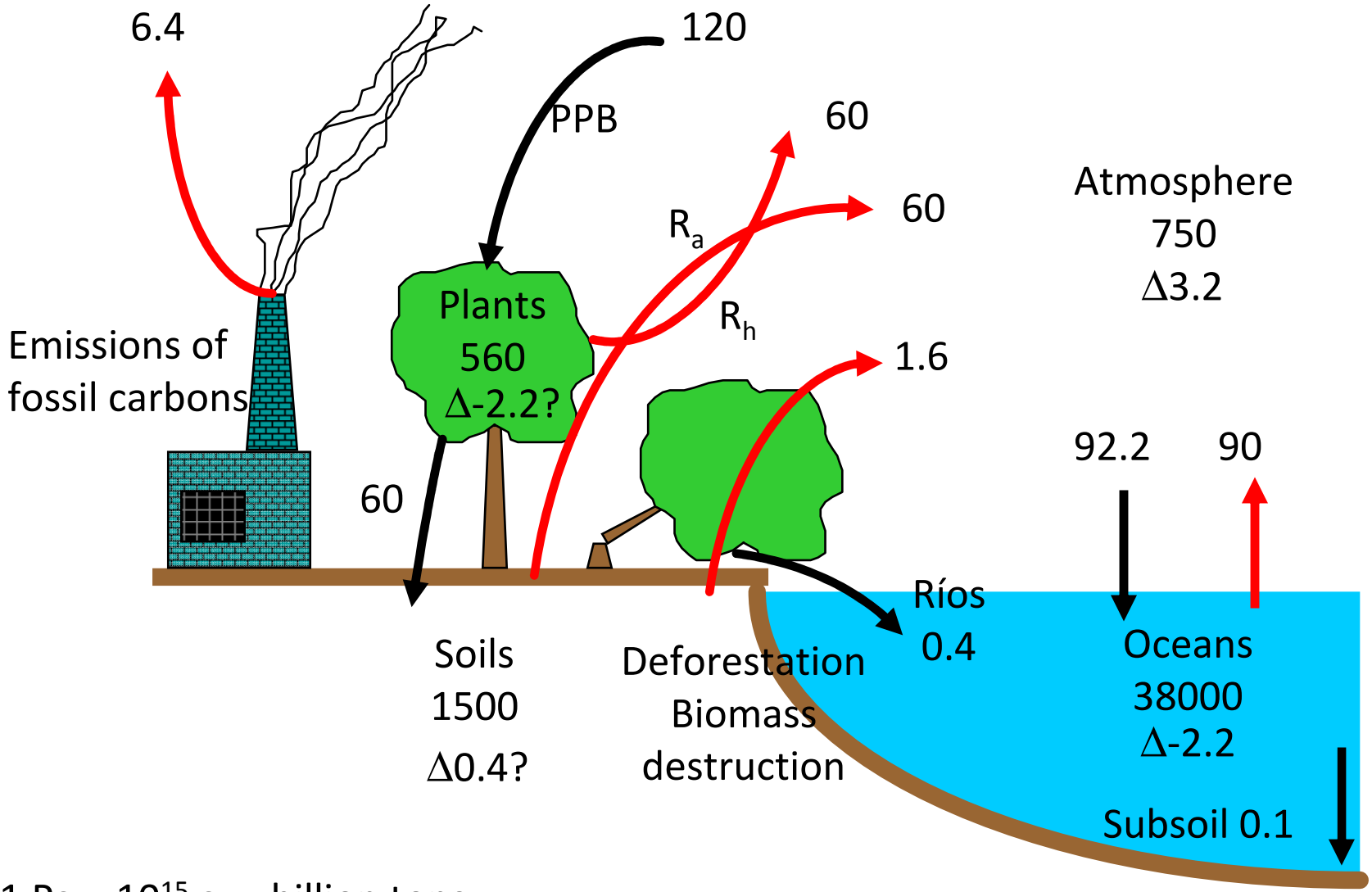
2011=397 ppm





Global carbon cycle (Pg: MM t C)

(Developed further from Schlesinger, 2003)



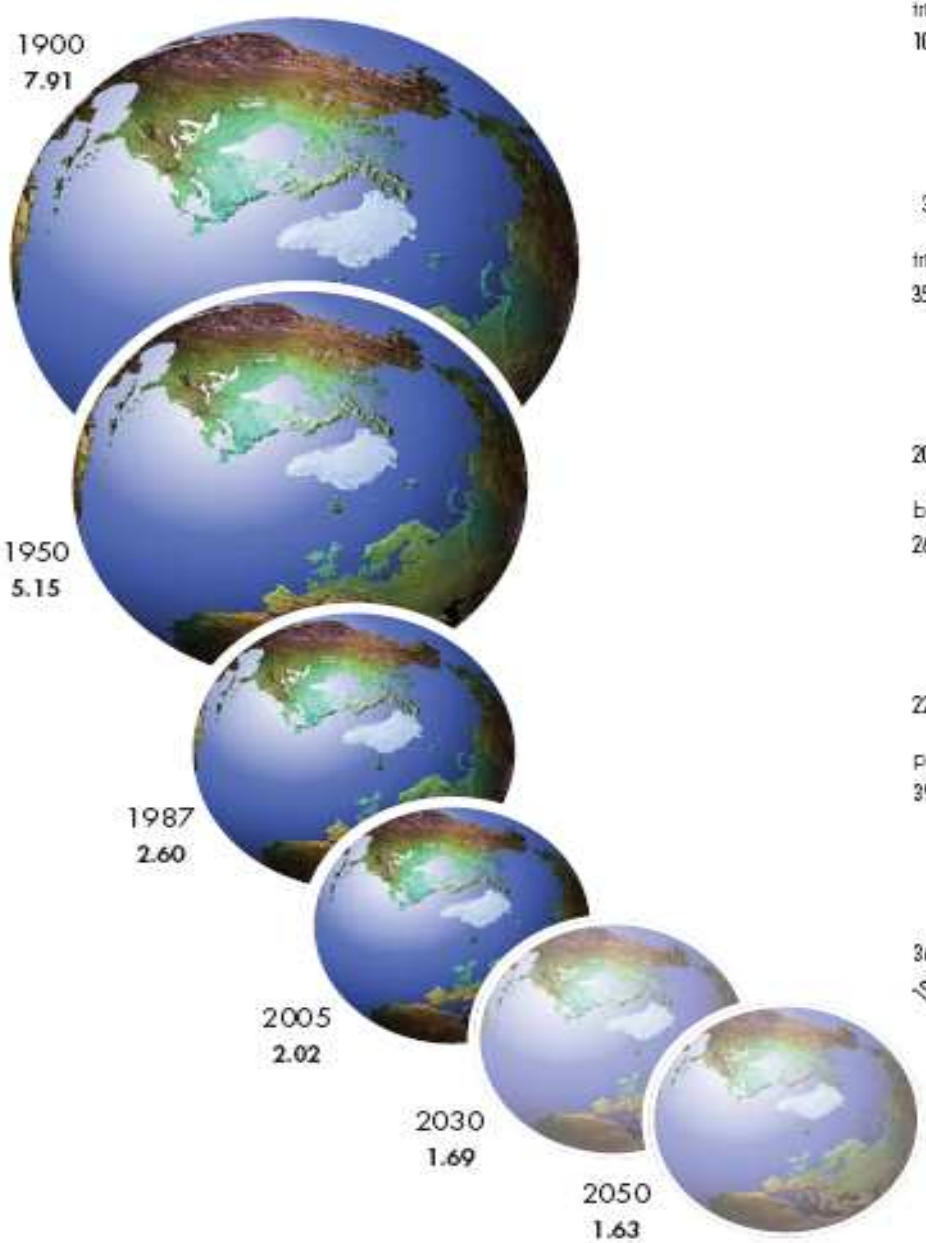
1 Pg = 10^{15} g = billion tons

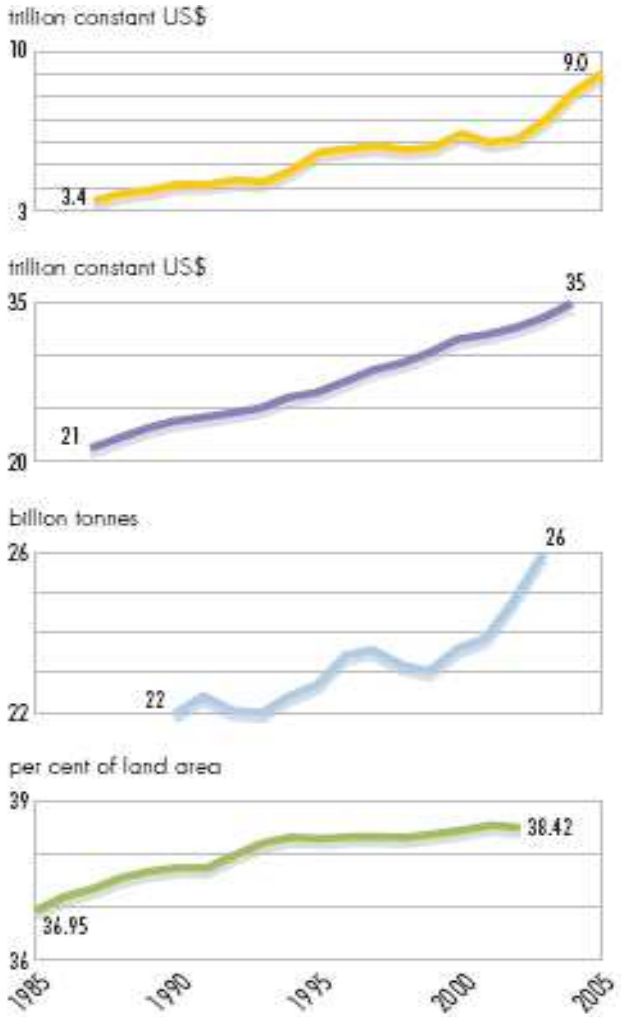
2. New scientific questions

A new emergent research field in the social sciences deals with

- theoretical and empirical approaches and strategies of a long-term transformative change towards sustainability and
- processes of sustainable development (Grin/Rotmans/ Schot 2010),
- reduction of risks, adaptation, resilience and social equity.

Our World is getting smaller





Notes: Numbers next to images of Earth reflect hectares of land per capita.

Graphs show changes in trade volume (1987–2005), GDP (1987–2004), CO_2 emissions (1990–2003) and agricultural land area (1987–2002).

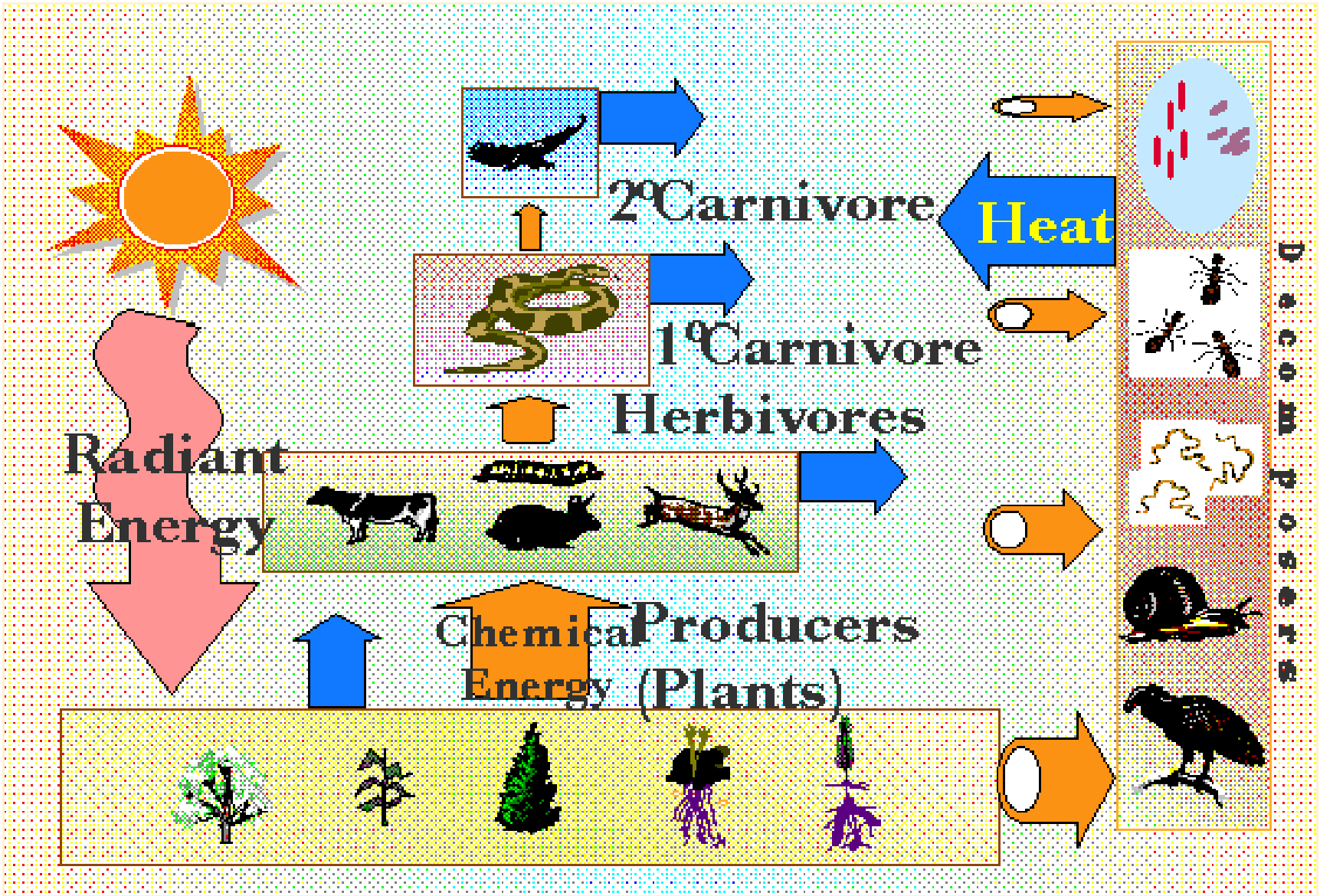
Sources: FAOSTAT 2006, Chapter 9 population projection, WTO 2007, GEO Data Portal compiled from UNPD 2007low estimate, World Bank 2006a, UNFCCC-CDIAC 2006 and FAOSTAT 2004

3. Transdisciplinary links: sustainability, development, peace and security

Dangers for a long-term transition for sustainability are related to:

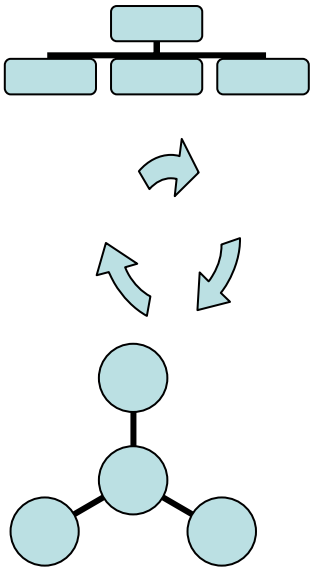
- linear, **non-linear, chaotic or cascading** systems' changes in the natural and human systems during the Anthropocene;
- From a multidisciplinary approach of **systems theory** and **complexity research** possible linkages
  - between a fourth sustainability revolution and
  - a sustainable peace must be analysed.

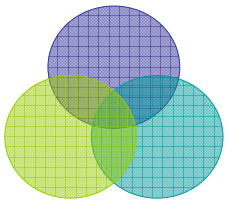
Energy Flow


2°Carnivore
1°Carnivore
Herbivores
Producers
(Plants)
Radiant
Energy
Chemical
Energy
Heat
Decomposers

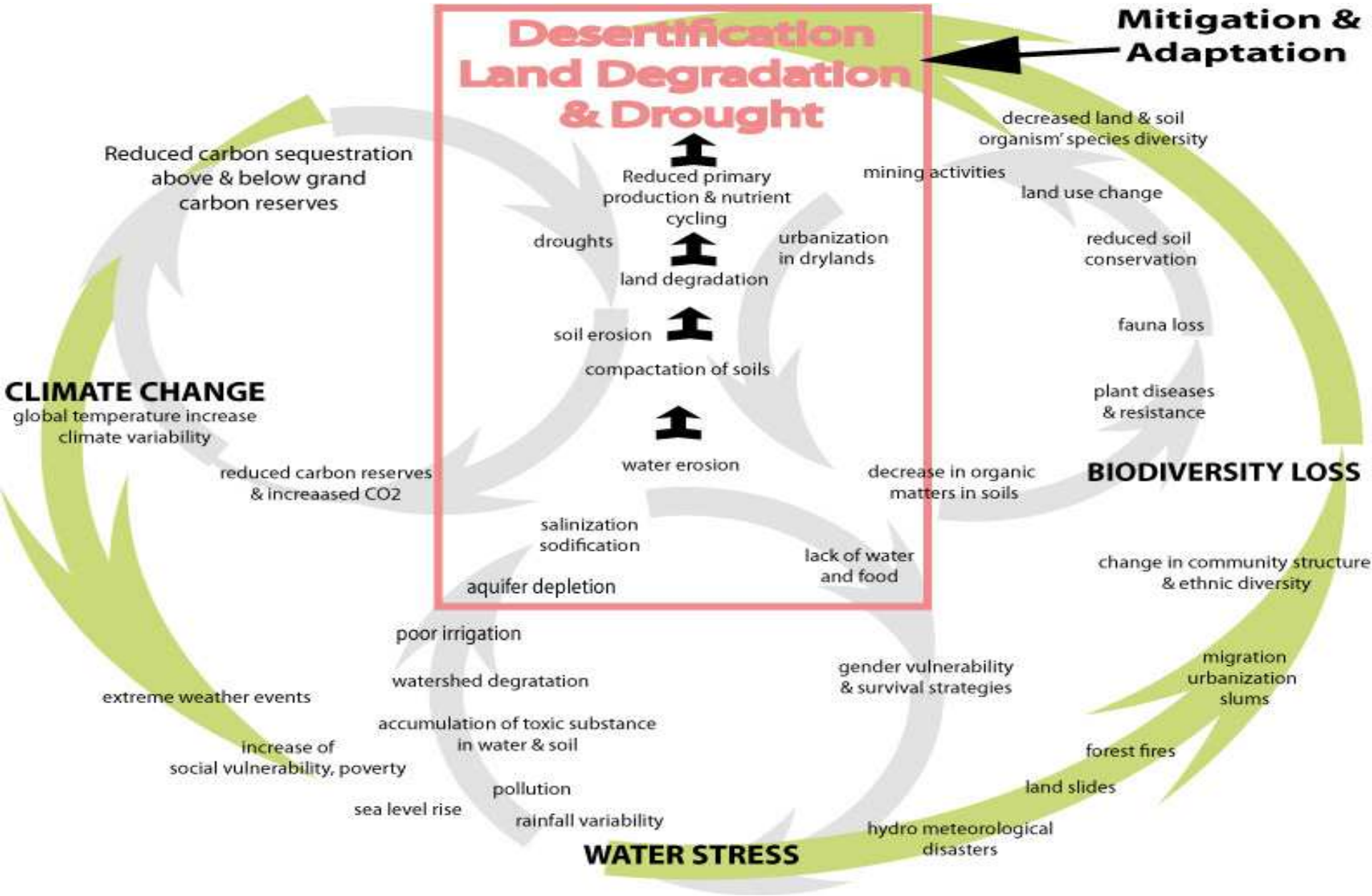
Disciplinary vs transdisciplinary

- **Disciplinary:** research of isolated knowledge
- **Multidisciplinary:** Juxtaposition of disciplines in the same project
- **Interdisciplinary:** analysis from different disciplines with a common objective
- **Transdisciplinary:** structural isomorphism or nodes with common concepts and systemic approach

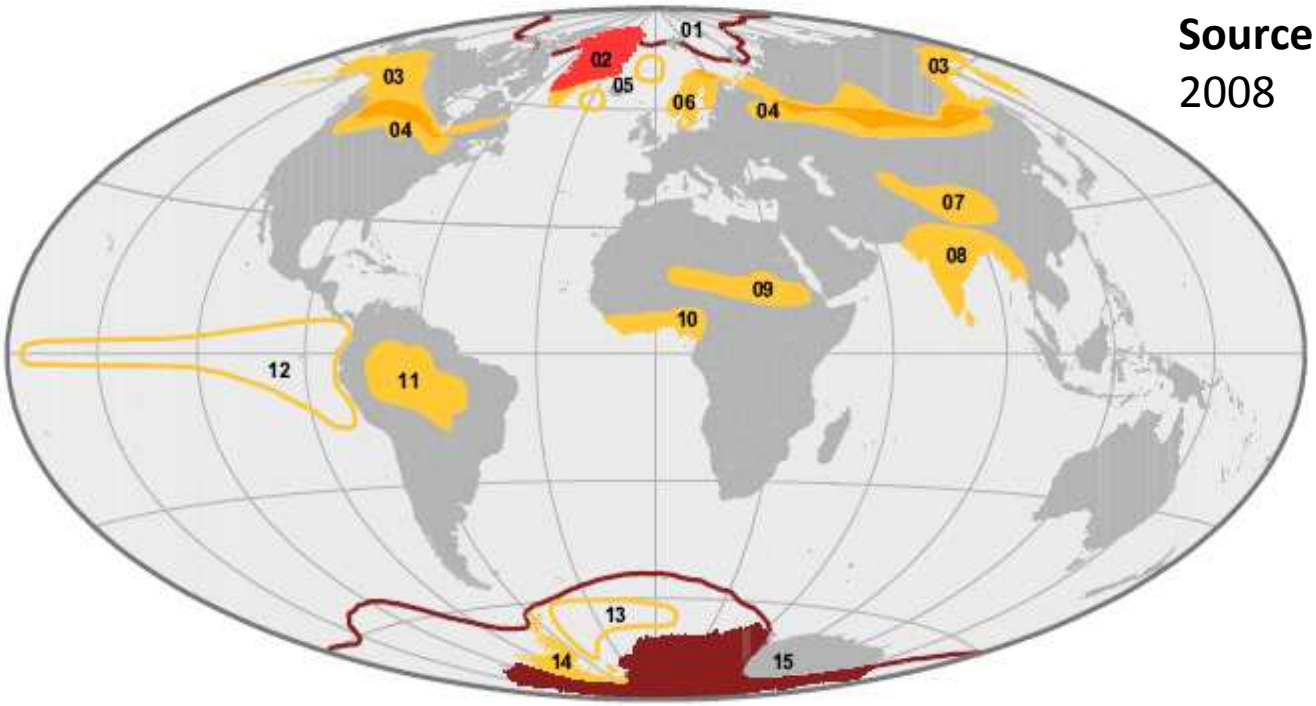




Transdisciplinary links



(Potential) tipping points of the Earth system



Source: Schellnhuber, 2008

01 Arctic Sea Ice Loss

02 Greenland Ice Sheet

03 Thawing Permafrost / Methan Escape

04 Boreal Forest Dieback

05 Suppression of Atlantic Deep Water Formation

06 Climatic Change-Induced Ozon Hole over Northern Europe

07 Albedo Tibetan Plateau

08 Indian Monsoon

09 Re-Greening Sahara / Sealing of Dust Sources

10 West African Monsoon

11 Dieback of Amazon Rainforest

12 Southern Pacific Climate Oscillation

13 Antarctic Deep Water Formation / Nutrients Upwelling

14 Westantarctic Ice Sheet

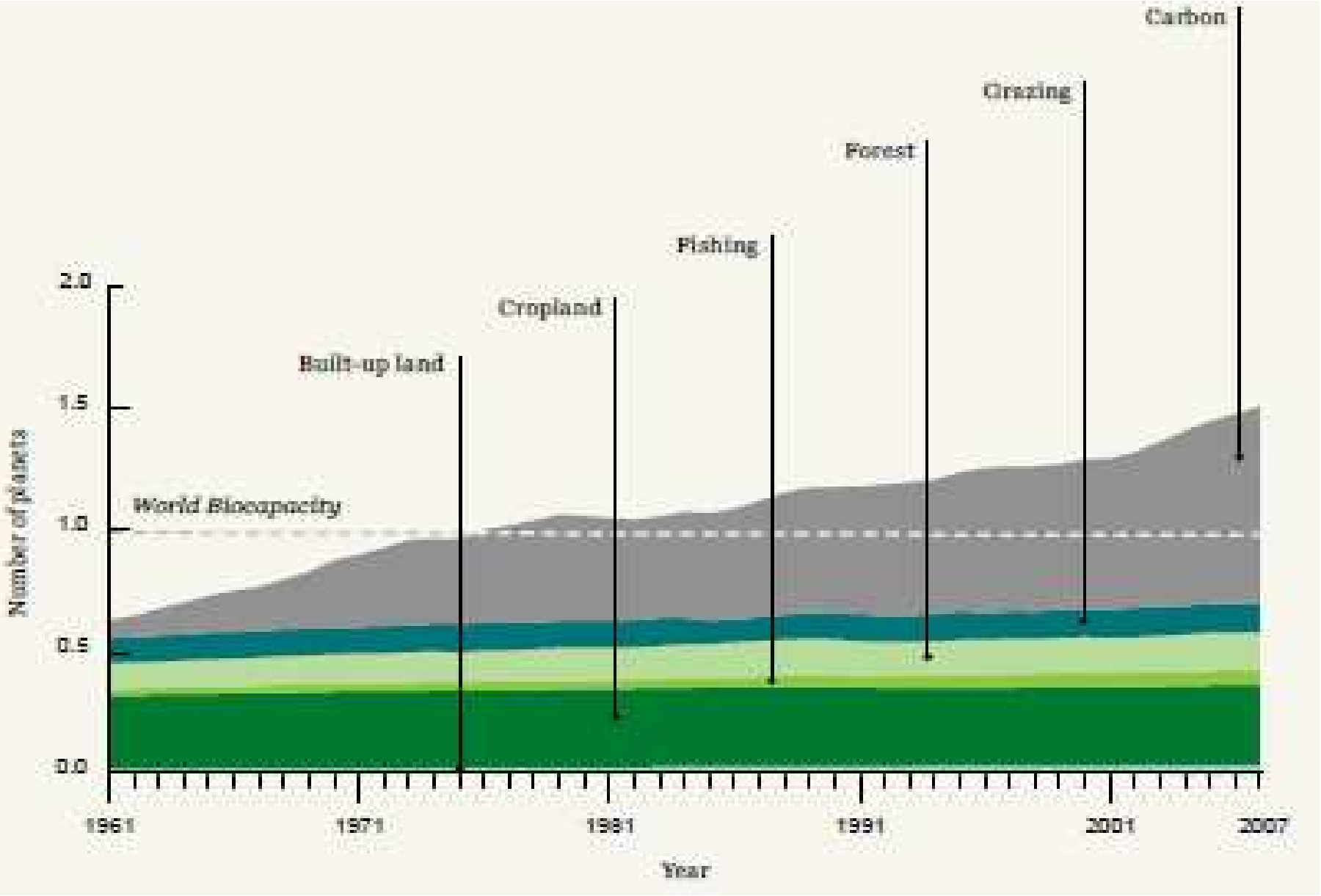
15 Antarctic Ozone Hole

Scientific questions

1. Which conceptual **linkages** exist between the discussion on **sustainable development** and a **sustainable peace**?
2. Which possible **consequences of non-action** and of a postponement of decisions may be foreseen in the area of global environmental change (water, soil, climate change, biodiversity) on the **international peace** and security – from the perspective of states and international organizations as well as of **human and gender security**?
3. May policies of ecological **non-action** increase the intensity of anthropogenic climate-induced natural hazards and disasters, which may become for billions of people an issue of **survival** and a serious **threat to international peace and security** during the 21st century?
4. May an **anticipative learning and a forward looking** public and global discourse on the necessary long term transformative change **contribute** to a sustainable development and counter new threats for international peace and security in a preventive manner?

Impacts of humans on resources

http://wwf.panda.org/about_our_earth/all_publications/living_planet_report/2010: 35

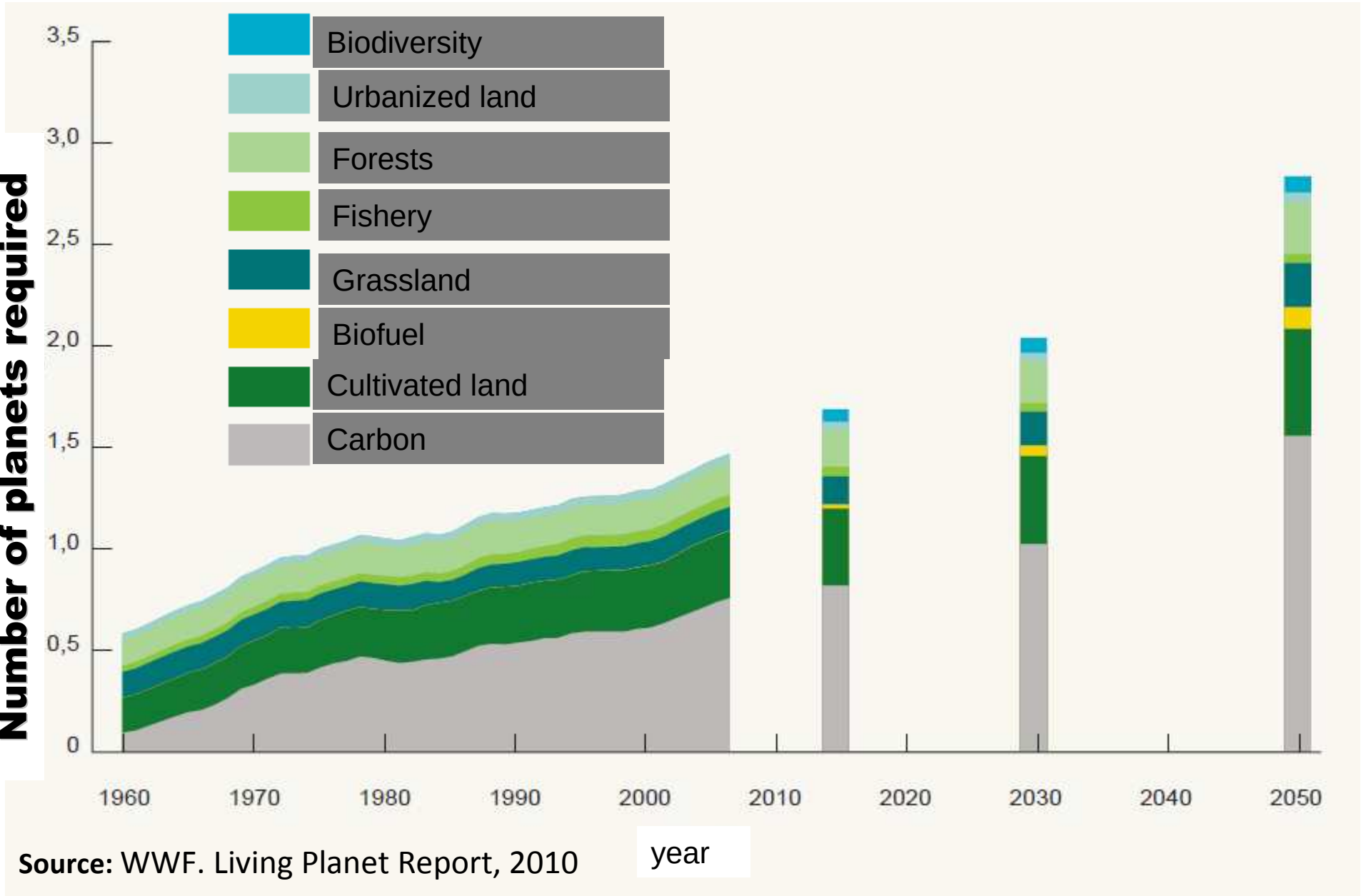


4. What will limit the relation between peace and sustainability: industrialization of warfare & environmental services

5. Which global technical, societal, environmental and political transformation occurred during the 20th century (after the agrarian revolution and **industrial revolution** during the 20th century in the areas of energy, communication, transportation and IT, which made **globalization** processes possible?
6. Which consequences did this **third technical revolution** have on **military strategy** and on the **industrialization of warfare**, on economic, societal, environmental and political globalization and on global environmental change?
7. Which are the observed and projected impacts of these **human-induced transformation** and its ecological impacts on international, national, and human and gender security and peace?
8. How to overcome the hierarchical, exclusive, discriminative and violent system called **patriarchy,** represented by authoritarian systems, elites, churches and non-democratic governments?

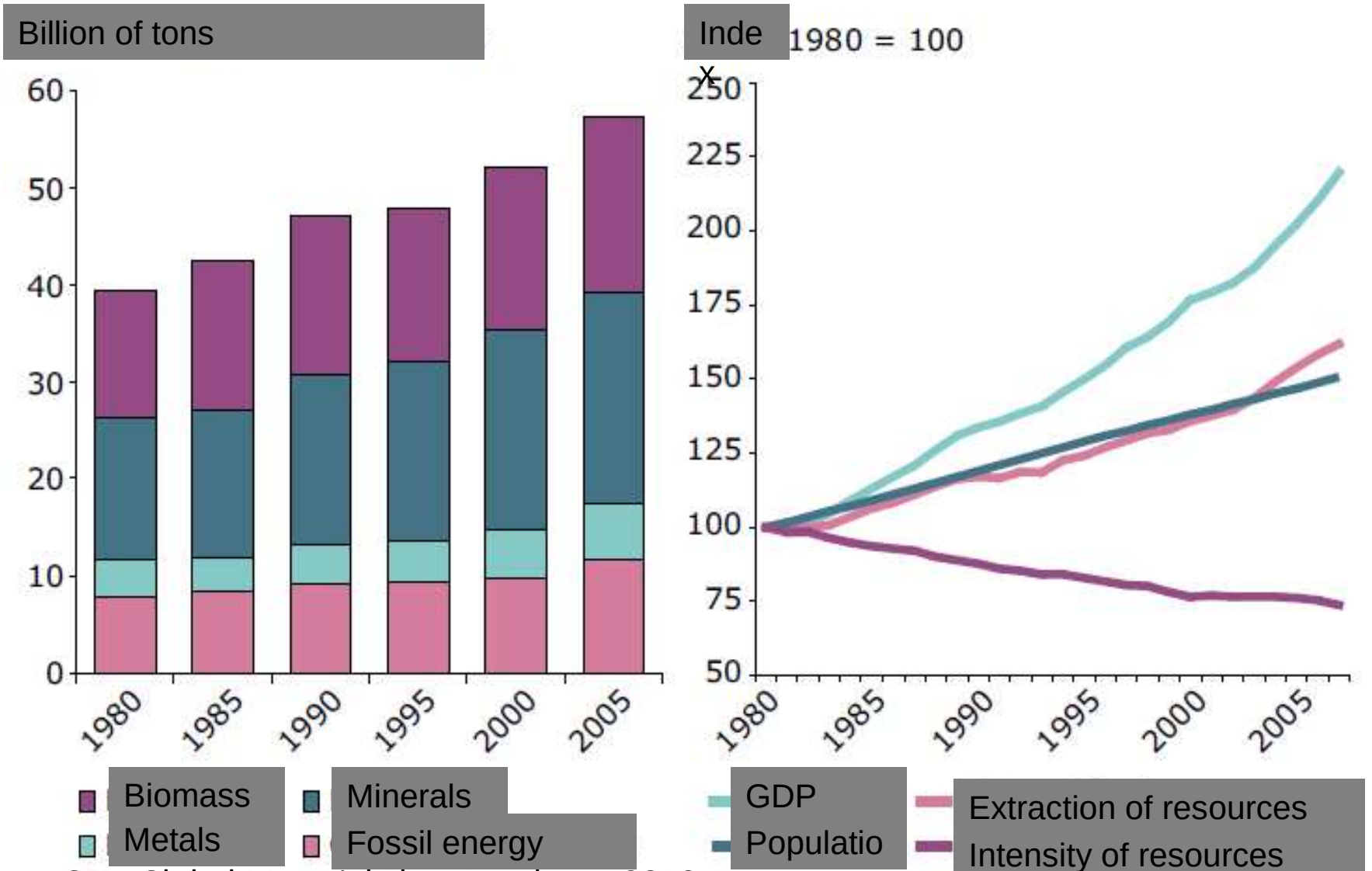
9. Since the 1970s the awareness on societal and environmental risks, on GEC and on the limits of **western modernization** paths has grown, what has resulted in the insight of many scientists that our societal and economic **system** requires a **fundamental transformation**, where the goal of a sustainable development offers an alternative that challenges the political and economic thinking and action and the business-*as-usual* strategies of neoliberal model.
10. Based on theoretical reflection and empirical case studies the KSI-team addressed two key questions on the nature of the transition and on the possibilities to influence this transition from the vantage point of sustainable development: the **dynamics** and **the governance of a long-term transformative change**
10. The KSI-team has analysed this transition from three perspectives: **complex systems analysis, a socio-technical and a governance perspective**.
11. From the perspective of peace research and sustainable peace this workshop addresses the question as to how during this long-term transformative change **violent systems changes** could be avoided and how this **transition towards a sustainable development** may contribute to a **sustainable peace**.

Projections of anthropogenic impacts on the planet



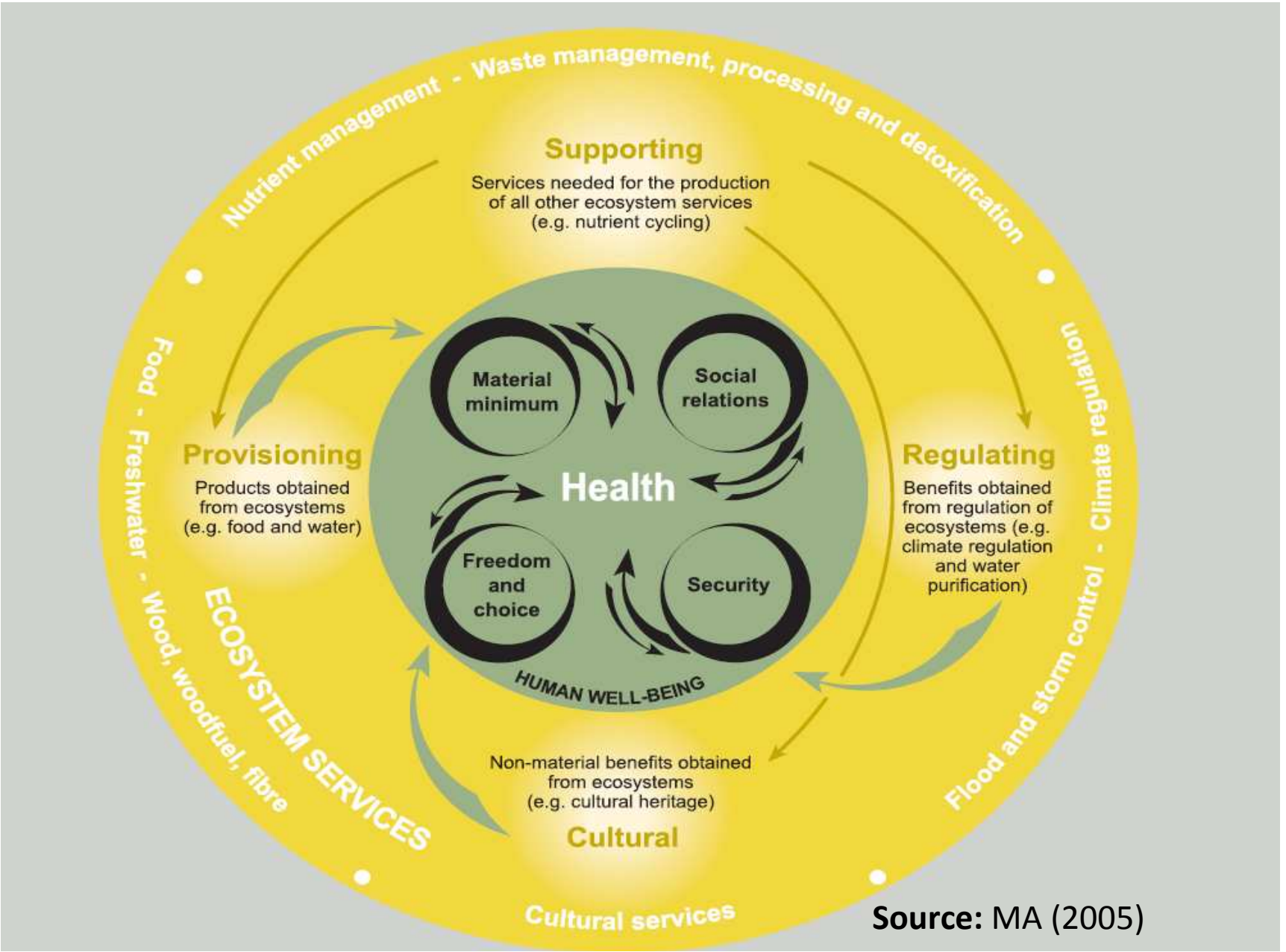
Source: WWF. Living Planet Report, 2010

Extraction of natural resources, ecosystems and mining between 1980 and 2005/2007



SERI Global Material Flow Database, 2010

Ecosystem services in danger



Source: MA (2005)

5. What will extend and deepen the relationship between sustainability & peace

1. A 'Fourth Sustainability Revolution' requires a **cultural change**, a **new cosmovision**, where worldview and mindset promote a **post-carbon & dematerialized society**.
2. ***Worldview*** refers to a world perception, ideas and beliefs (neoliberalism, realism, pragmatism, idealism) through which people interpret and interact with the world.
3. ***Mindset*** includes fixed mental attitudes or 'cultural lenses' (Washington Consensus, business-as-usual, market first) pre-determining person's or group's responses to interpretations of situations by referring to different patterns of perceiving and reasoning.
4. ***Governance:*** includes "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)

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

Sustainable Peace