



# Goals of the workshop on transition

Úrsula Oswald Spring

National Autonomous University of Mexico (CRIM-UNAM)

First MRF-Chair on Social Vulnerability of UNU-EHS

National Coordinator of Water Research in Mexico

# Content

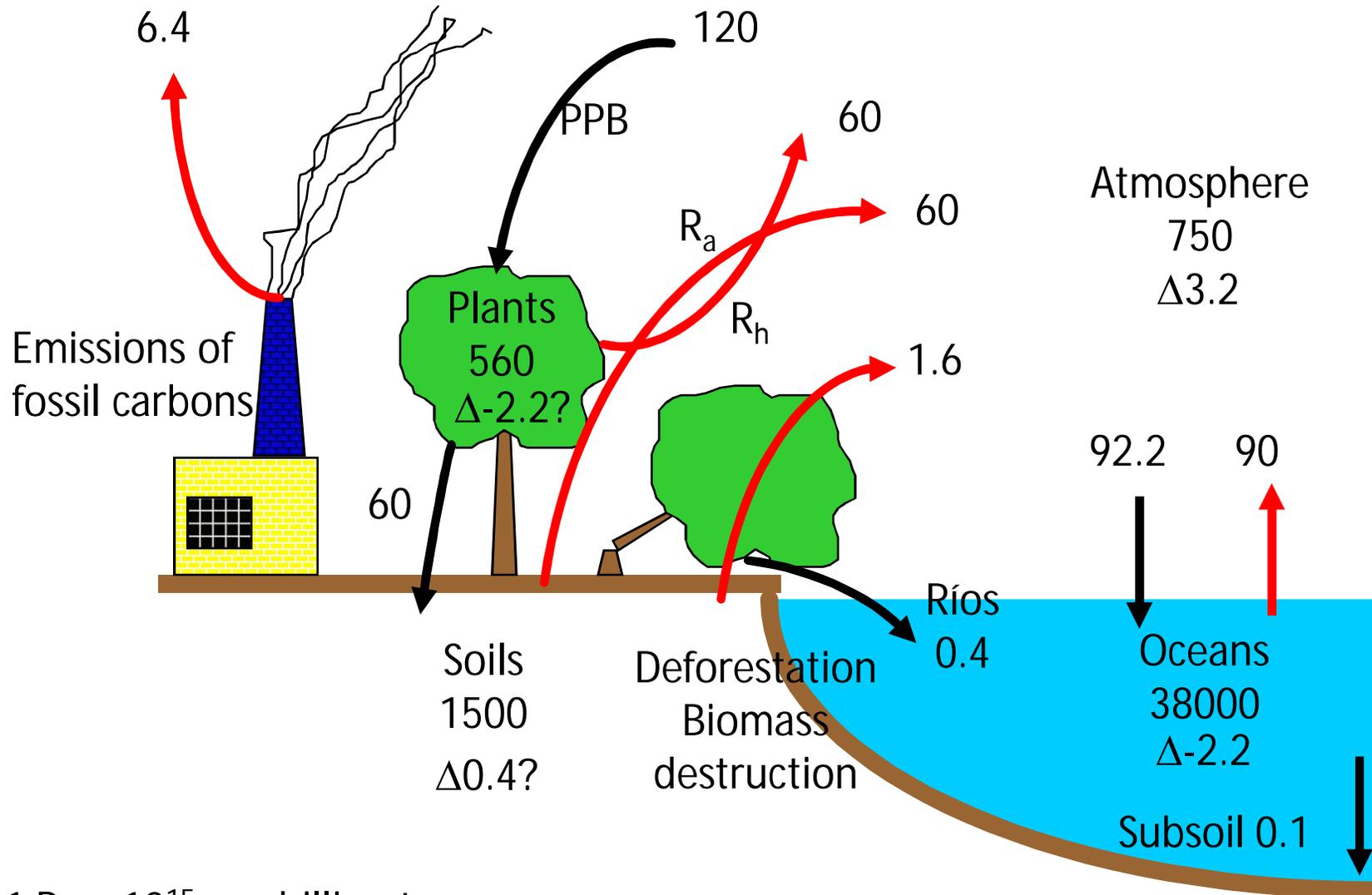
- 1. Goals of the workshop**
- 2. New scientific questions**
- 3. Transdisciplinary links: sustainability, development, peace and security**
- 4. What will limit the relation between peace and sustainability (industrialization of warfare)**
- 5. What will extend and deepening the relation between sustainability and peace**

# Goal 1

- To understand the **consequences of policies on global environmental and climate change** that resulted in a deficient implementation of agreements (Kyoto Protocol of UNFCCC, CBD, UNCCD) and in **non-binding policy** declarations of the G-20 and the postponement of legally binding agreements, what may represent not only a ‘Climate Paradox’, but increases the **risk of extreme events**. To reduce these risks and consequences of extreme events and uncertainties, **major changes in science, society, the business community and in politics** are necessary. This has inspired several scientists to call for a new ‘**scientific revolution**’ (Clark/Crutzen/ Schellnhuber 2004) or a ‘**fourth sustainability revolution**’ (Oswald Spring/Brauch 2011).

# Global carbon cycle (Pg: MM t C)

(Developed further from Schlesinger, 2003)

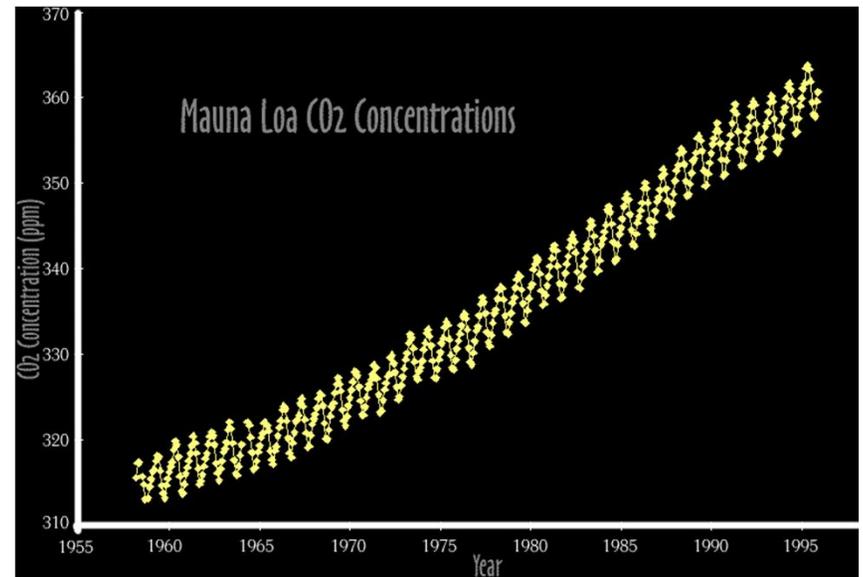
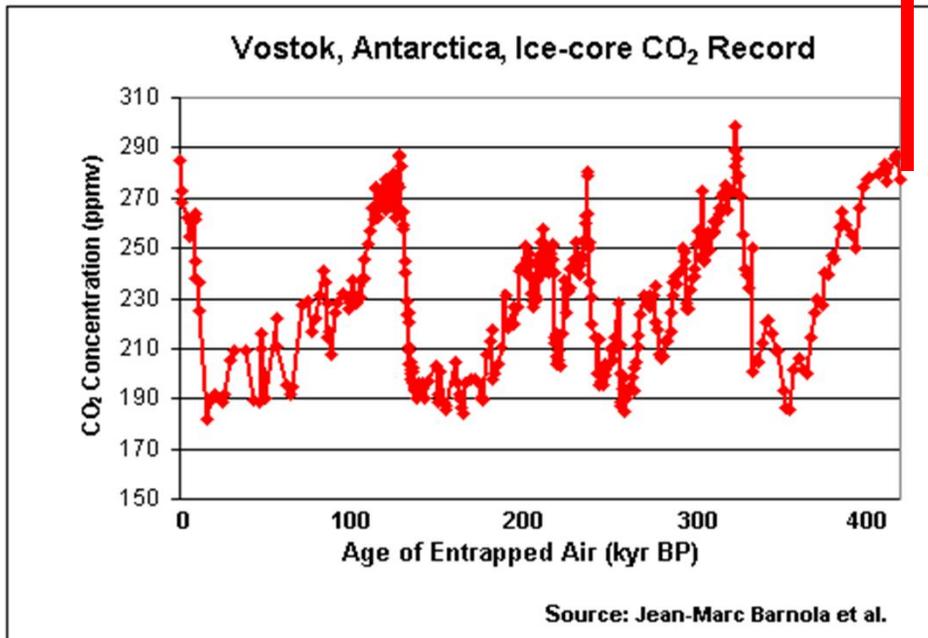


1 Pg =  $10^{15}$  g = billion tons

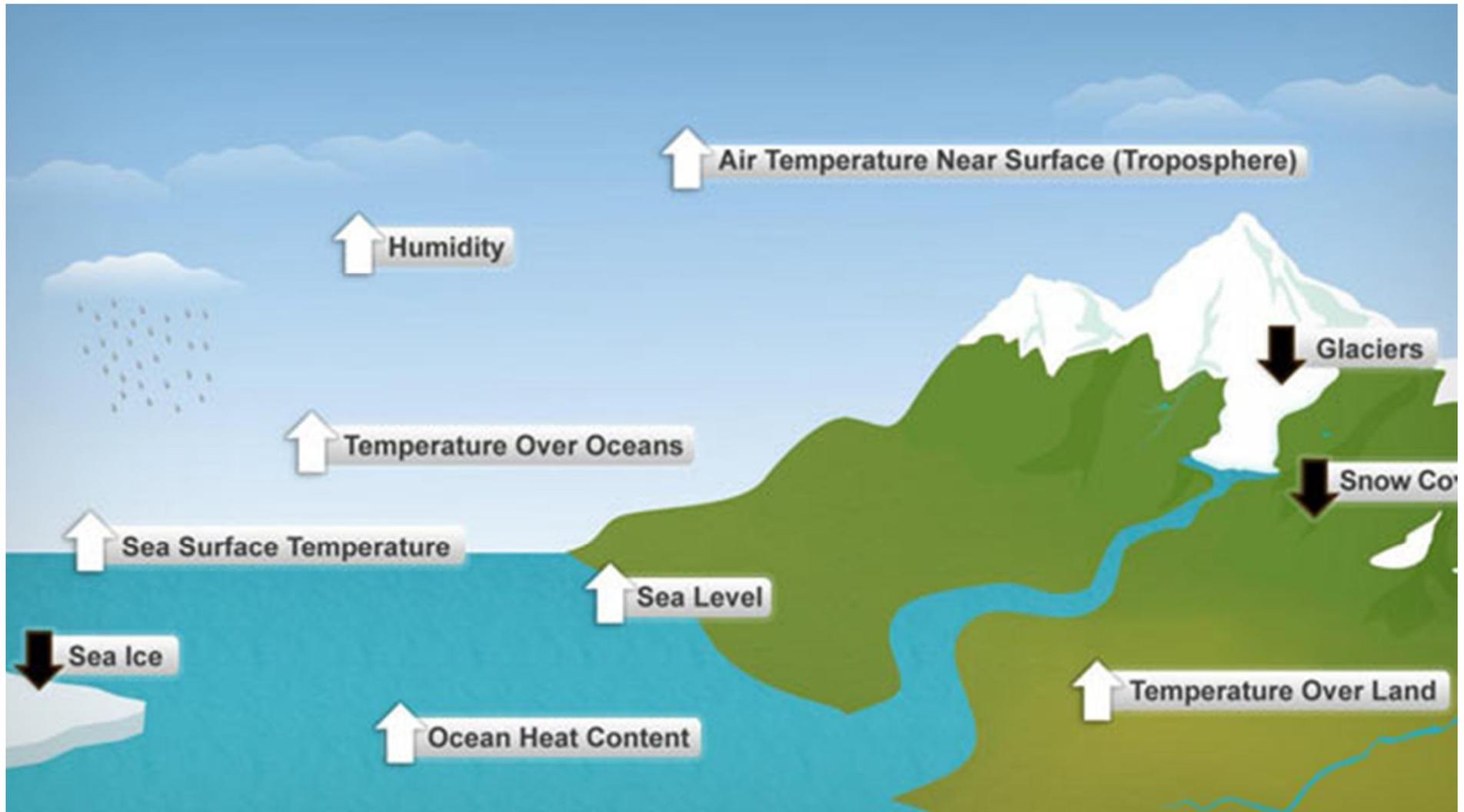
# Atmospheric concentration of CO<sub>2</sub>

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

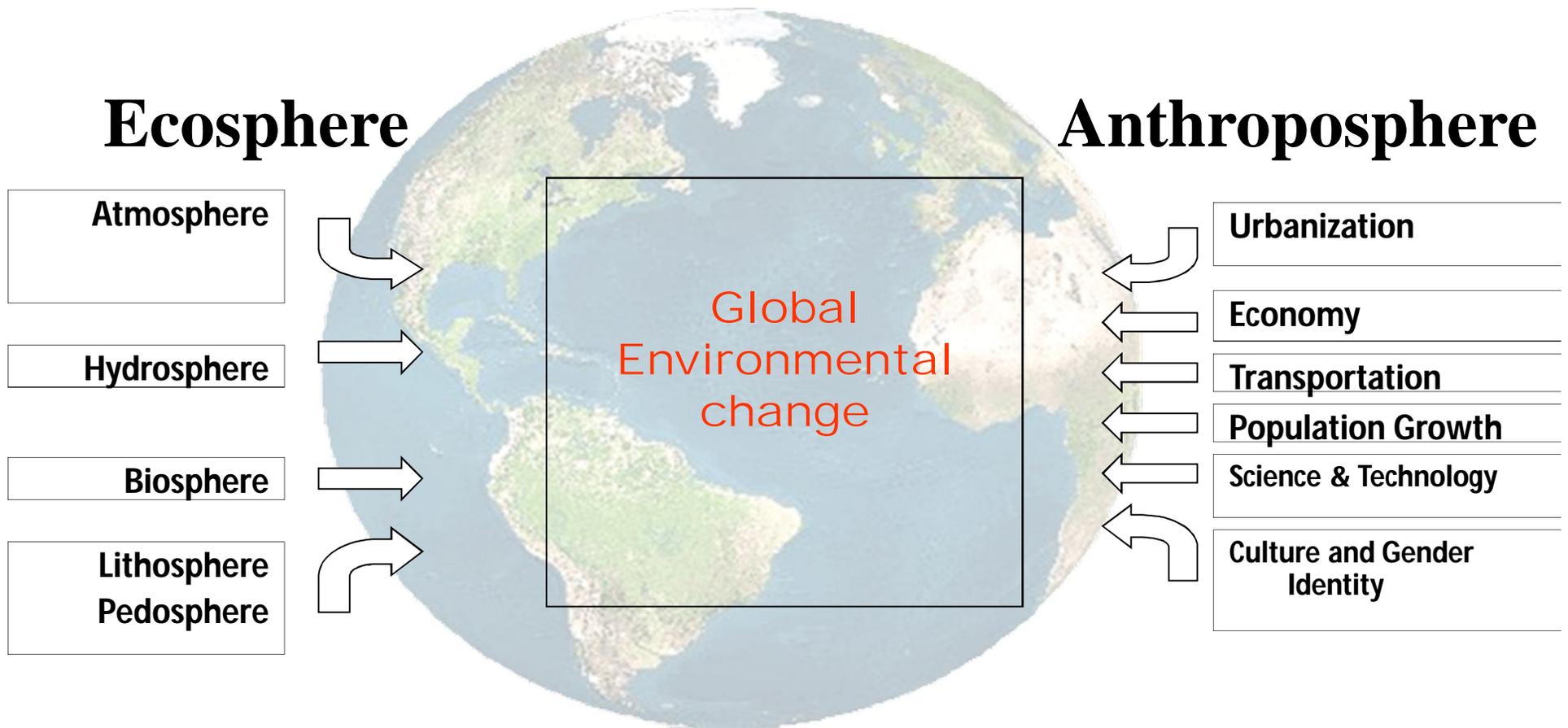
← 2011=397 ppm



# Global warming

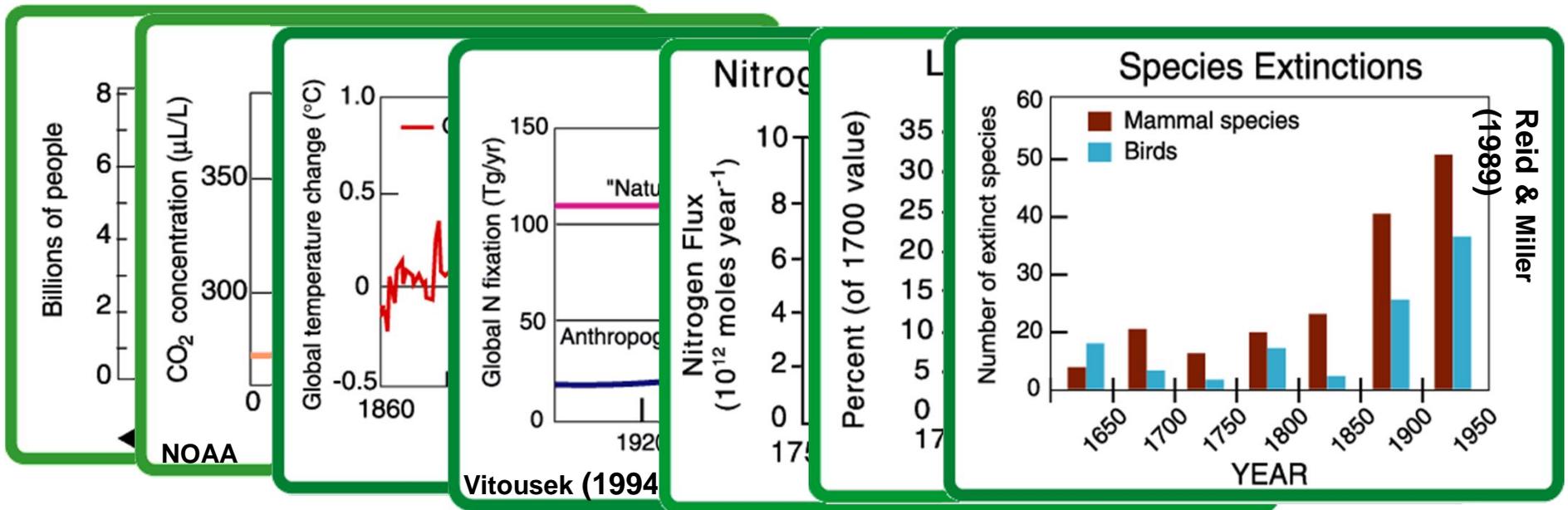


# Global Environmental Change (GEC)



# What is global environmental change?

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

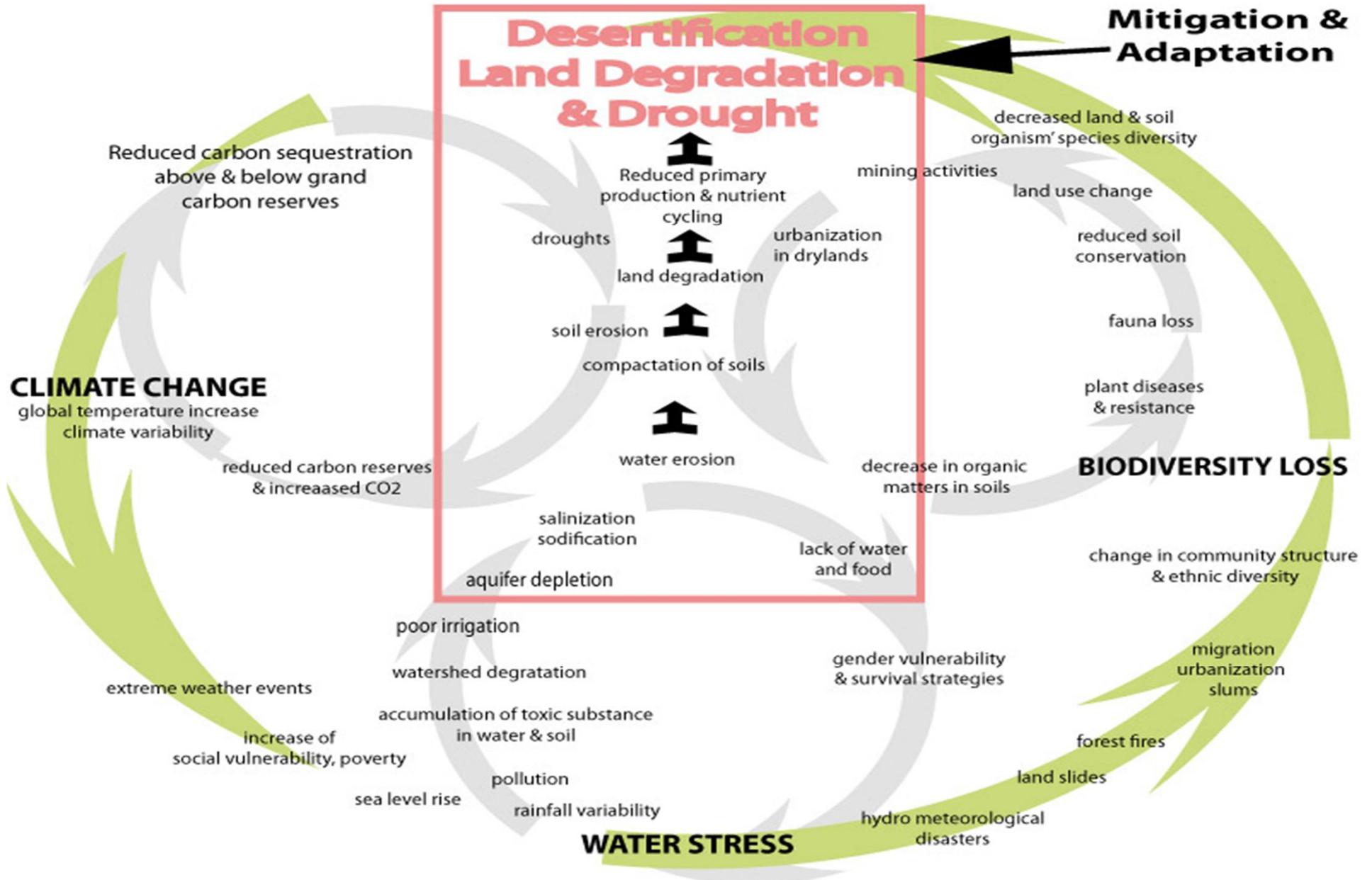


## Goal 2 and 3

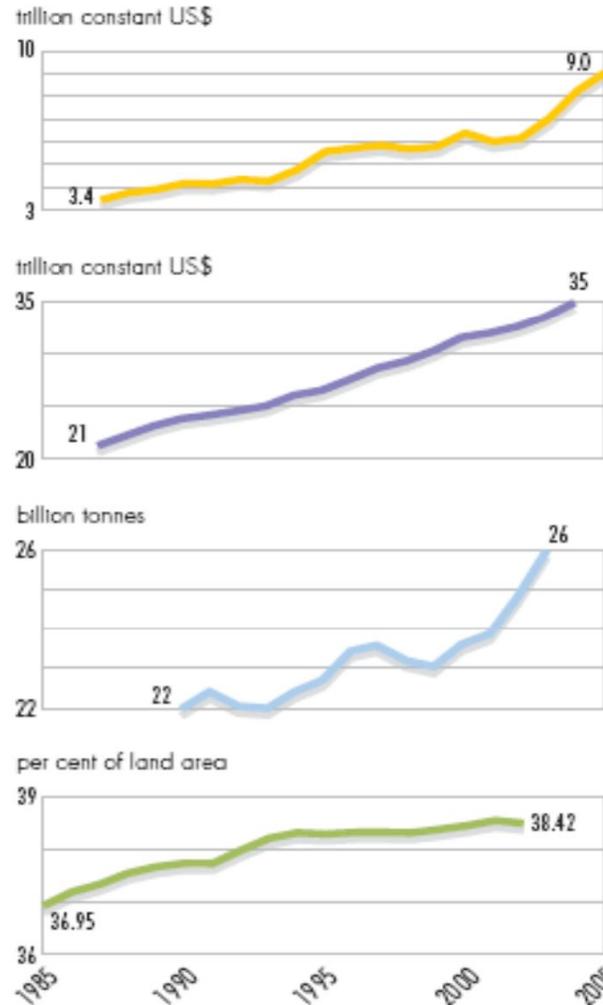
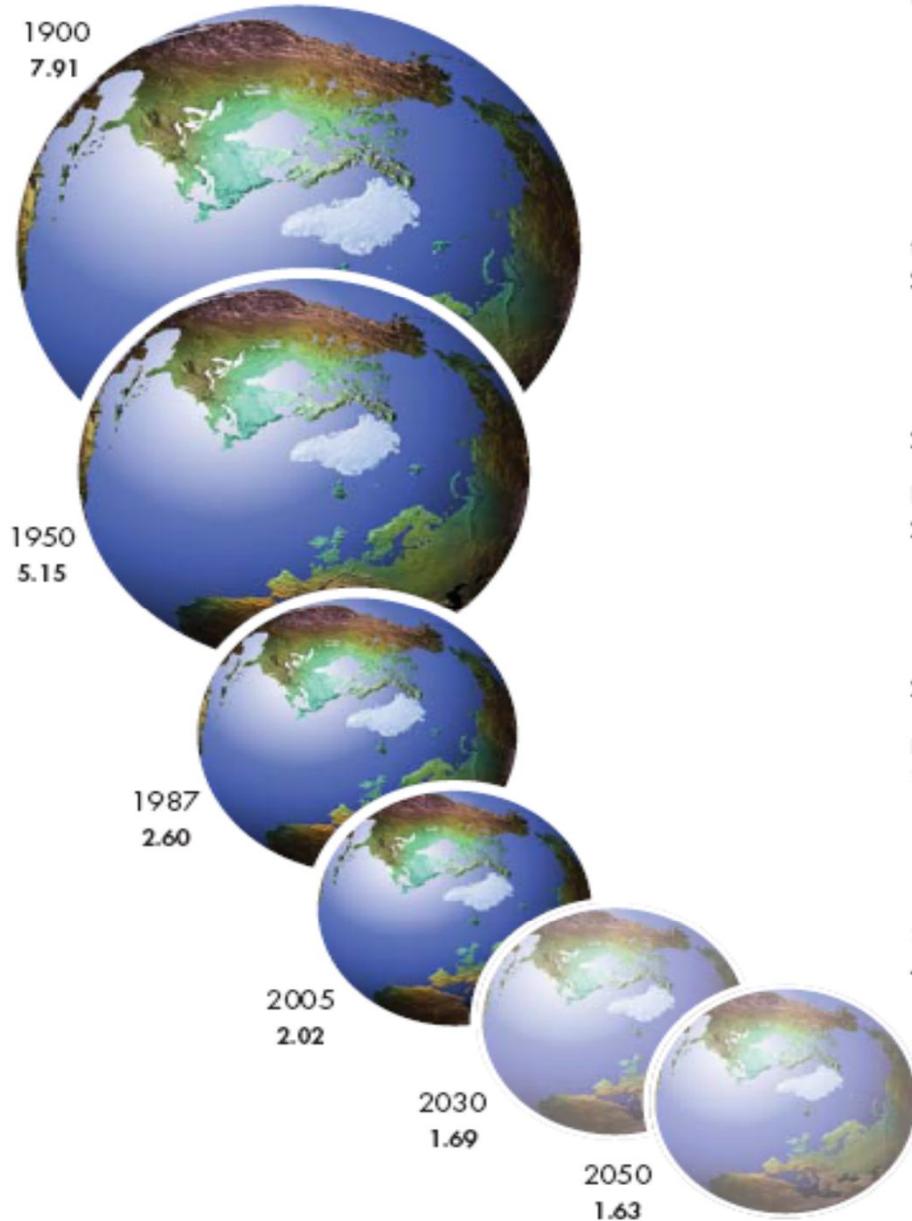
2. To address the **consequences of global environmental change and climate change on international peace and security** (Brauch/Oswald Spring *et al.* 2008, 2009, 2011), and the linkages between **global environmental change and security** (Scheffran *et al.* 2012).

3. In the context of these discourses a **sustainable peace** (De Rivera 2008) will also be addressed from the perspective of **human, gender and environmental a HUGE security** (Oswald Spring, 2010), improving equality, equity and sustainability.

# Interactions of GEC and resources



# Our World is getting smaller



- Trade
- GDP
- CO<sub>2</sub> emissions
- Agriculture

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<sub>2</sub> emissions (1990–2003) and agricultural land area (1987–2002).

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

## 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.**

# Unequal access to wealth

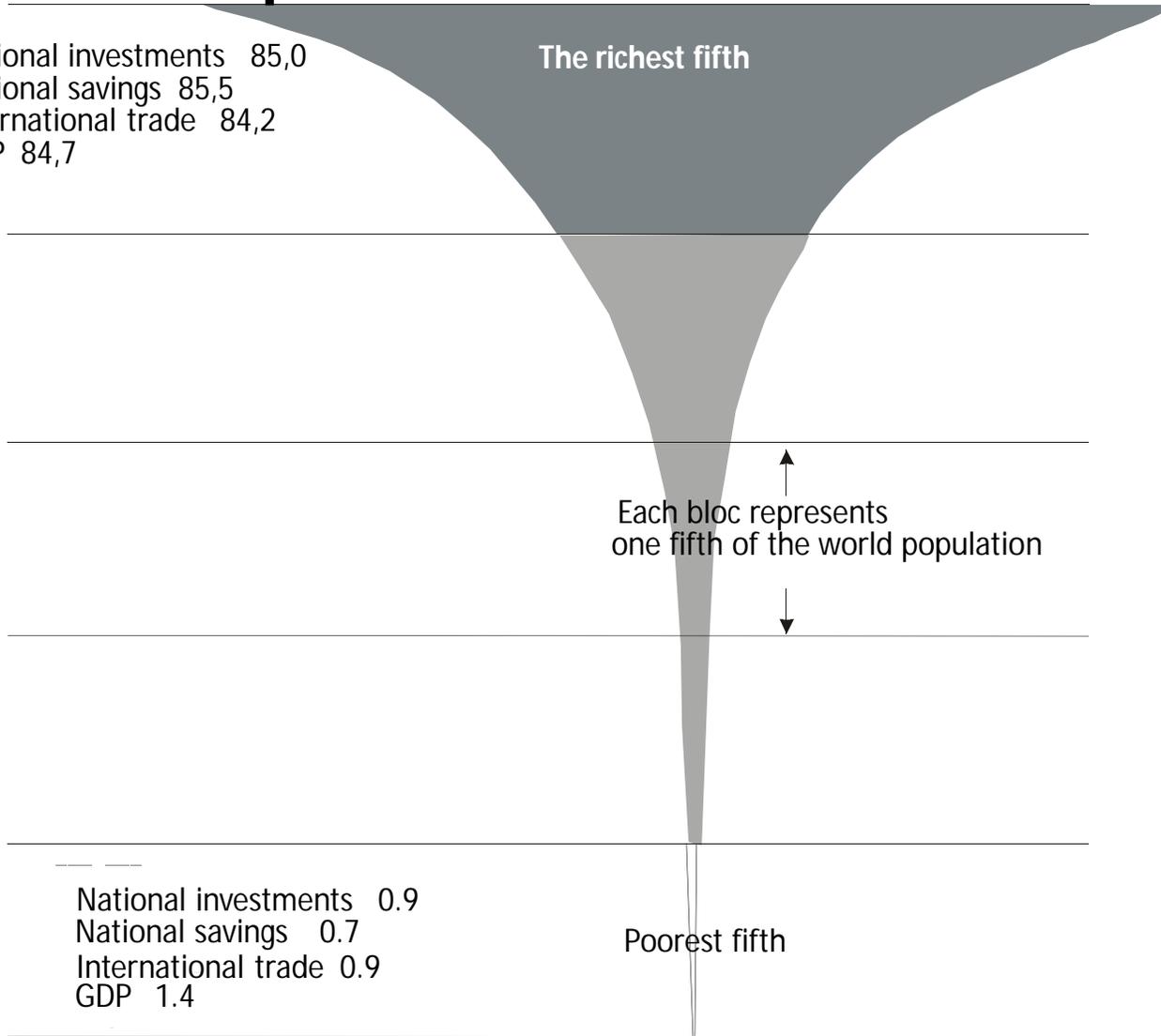
National investments 85,0  
National savings 85,5  
International trade 84,2  
GDP 84,7

The richest fifth

Each bloc represents  
one fifth of the world population

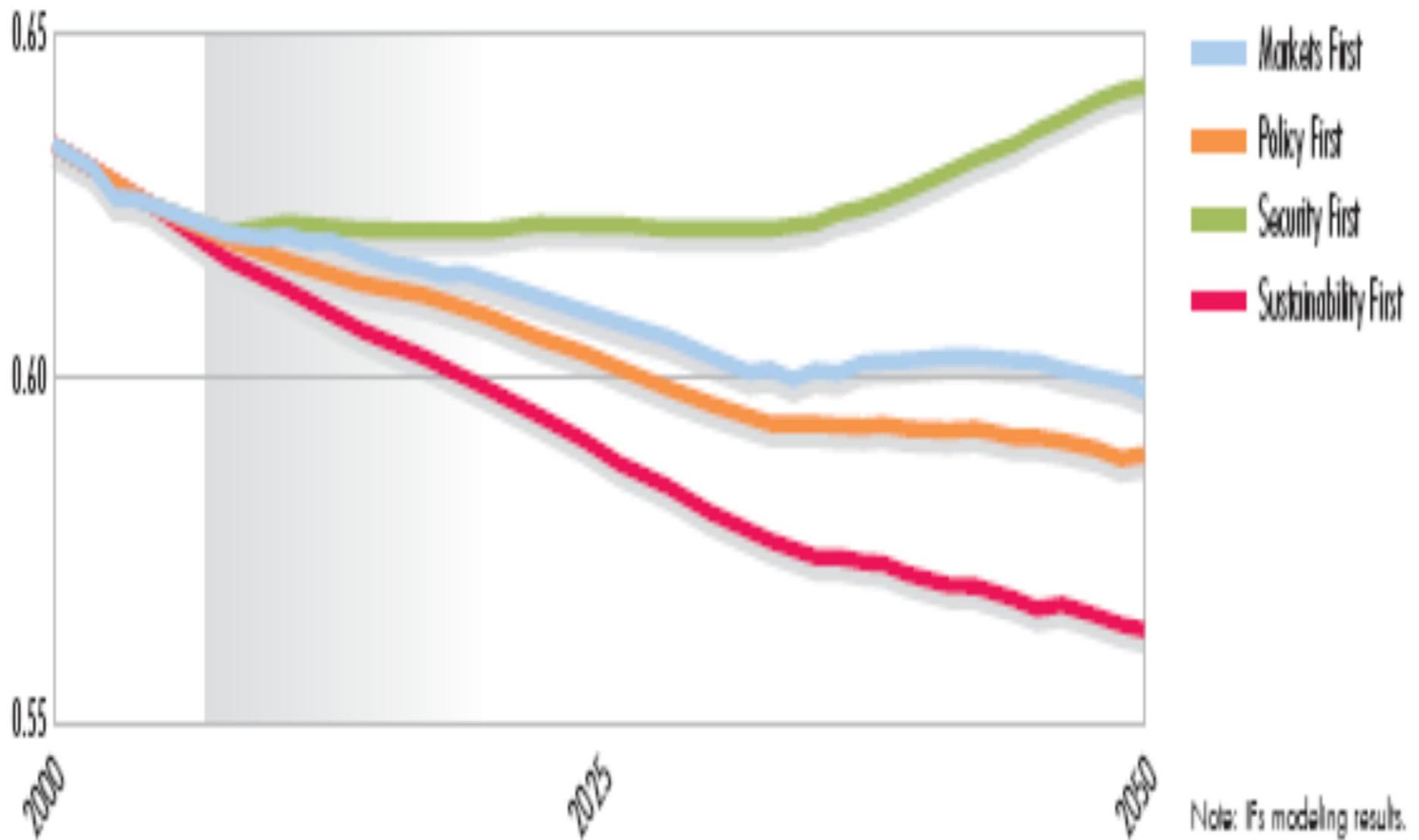
National investments 0.9  
National savings 0.7  
International trade 0.9  
GDP 1.4

Poorest fifth



# Inequality: Gini coefficient

Global GINI Index of Income (lesser is more equal)



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

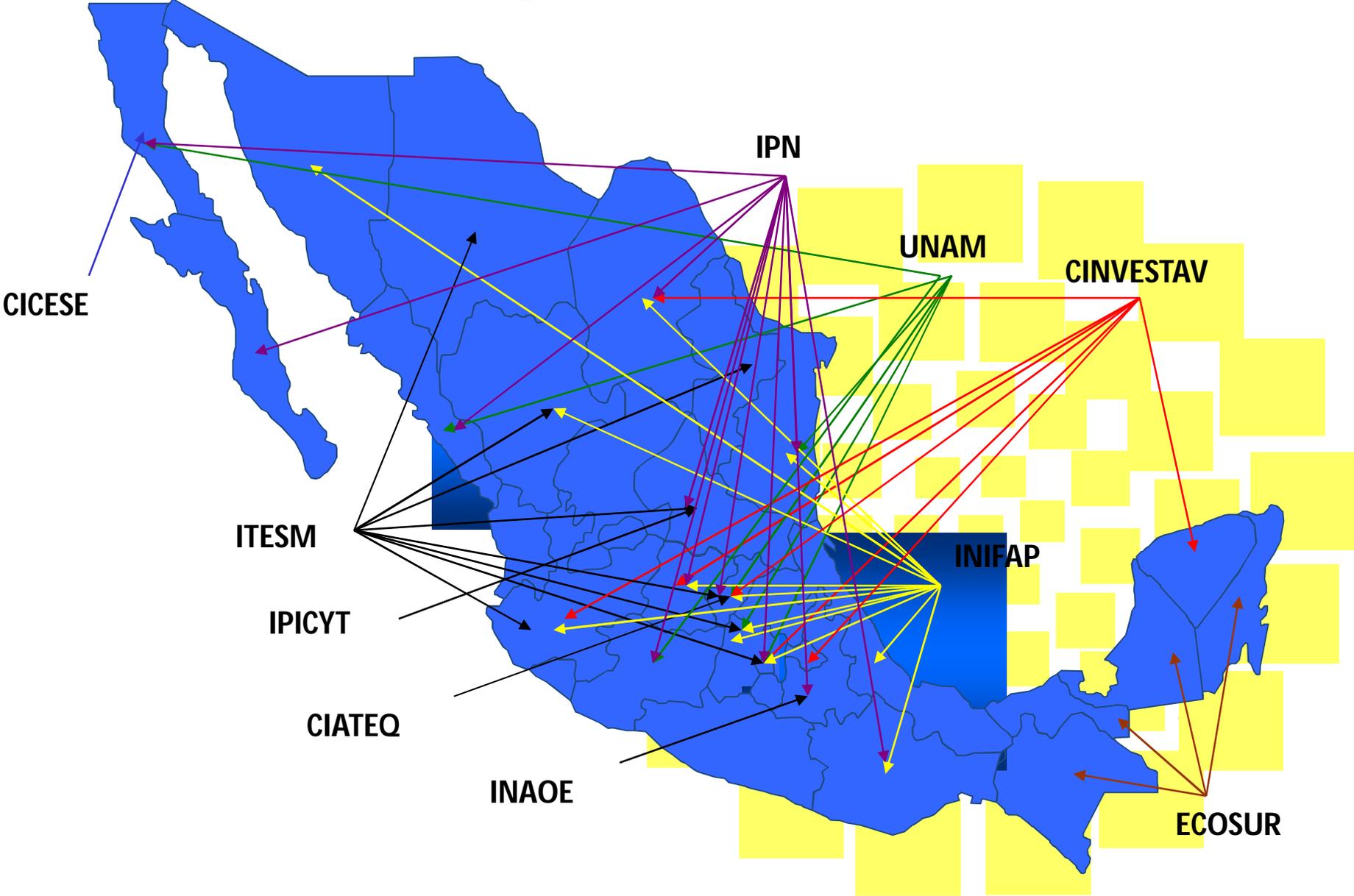
Dangers for a long-term transition for sustainability are related to:

- linear, **non-linear, chaotic or cascadian** 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.



# Mexican integration of research

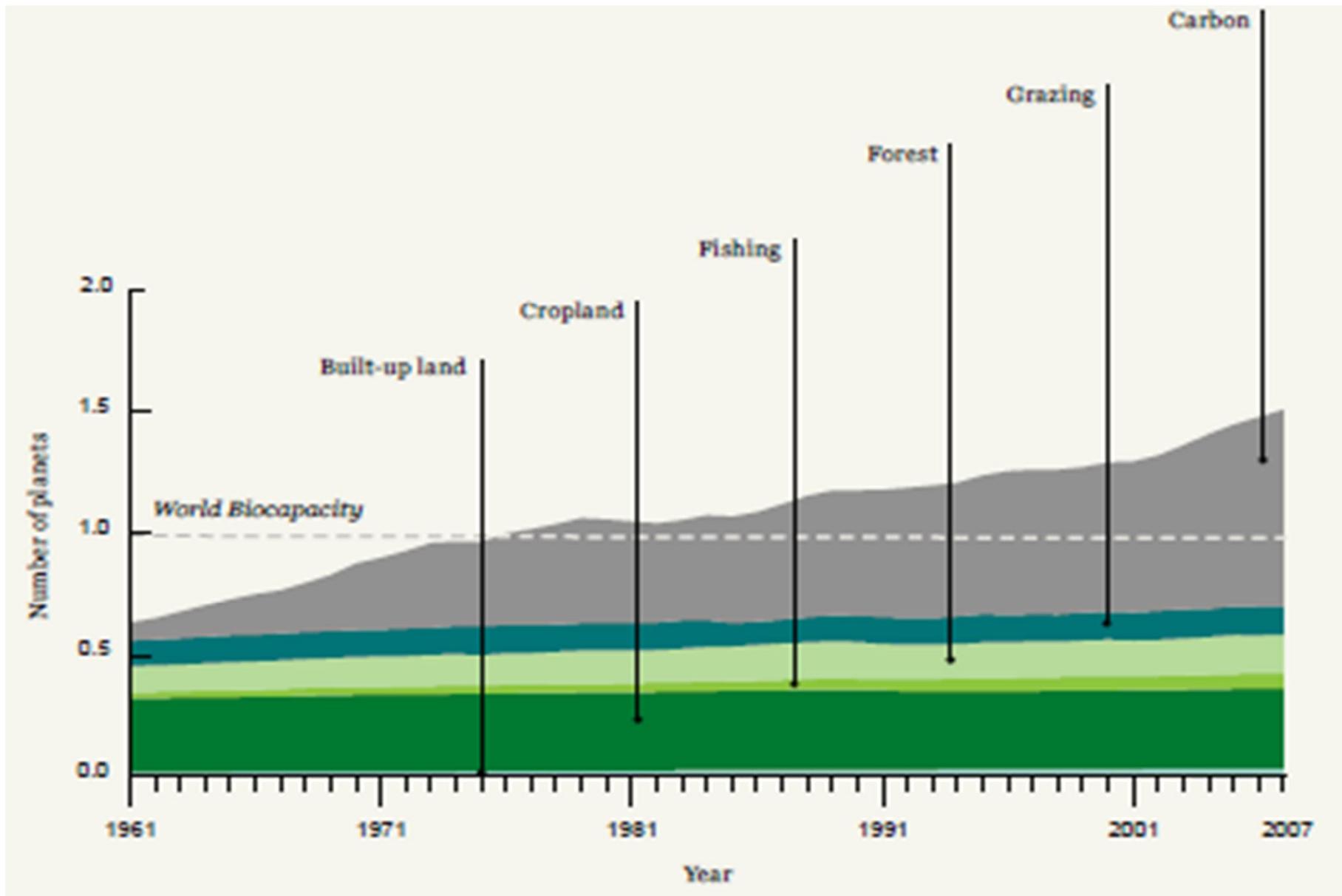


# Scientific questions

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 21<sup>st</sup> 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

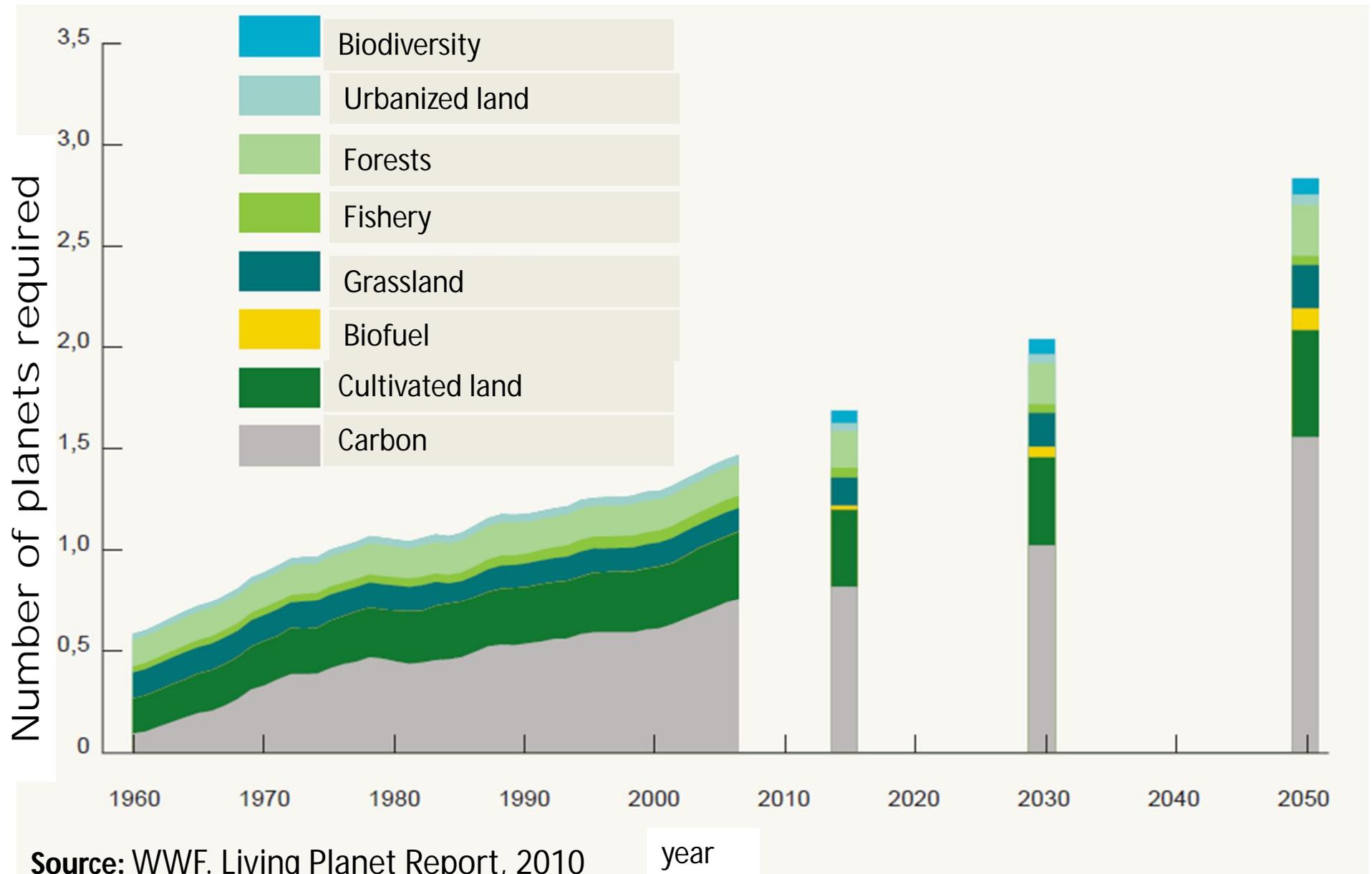
[http://www.panda.org/about\\_our\\_earth/all\\_publications/living\\_planet\\_report/2010](http://www.panda.org/about_our_earth/all_publications/living_planet_report/2010): 35



## 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?

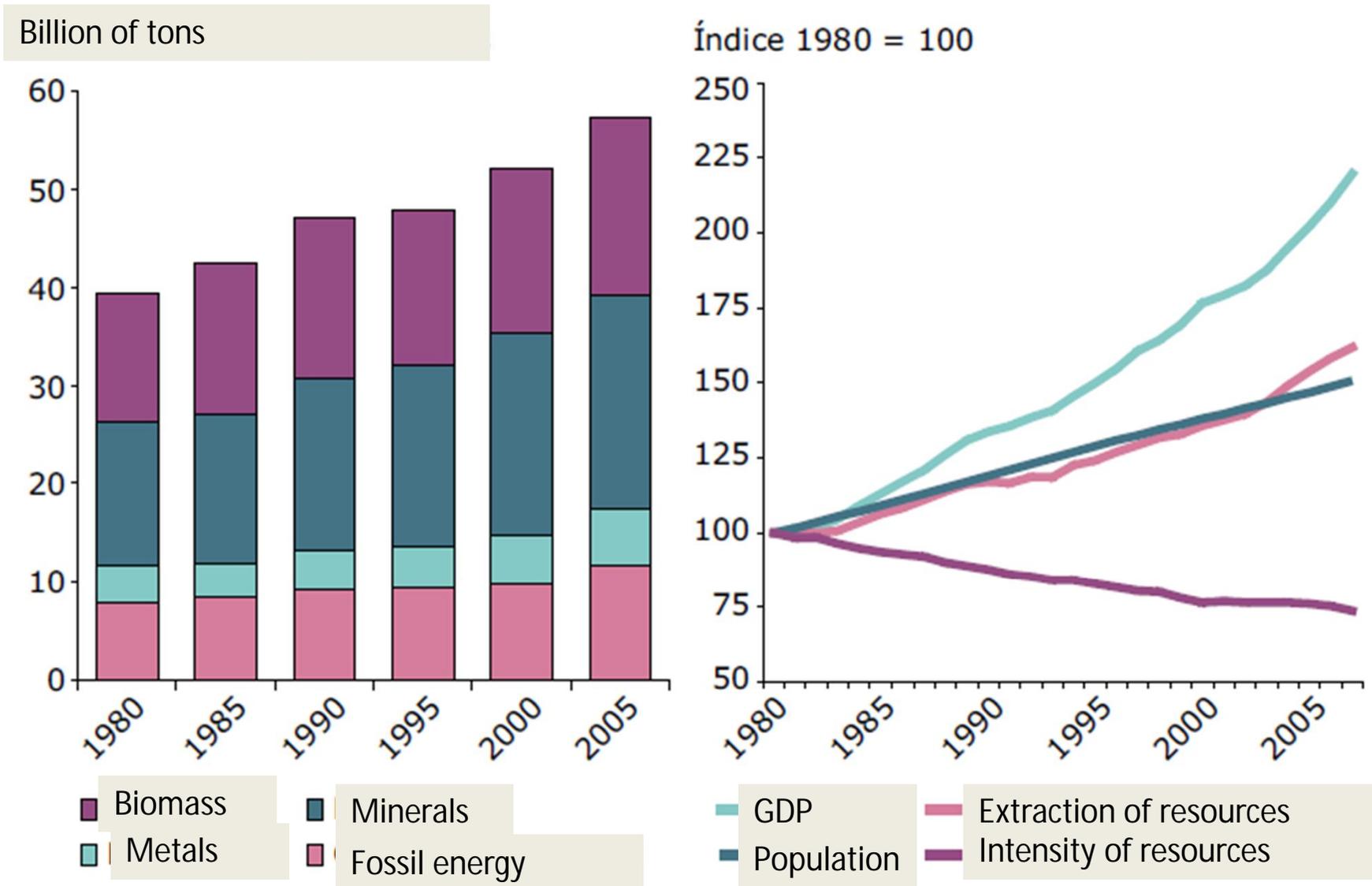
# Projections of anthropogenic impacts on the planet



Source: WWF. Living Planet Report, 2010

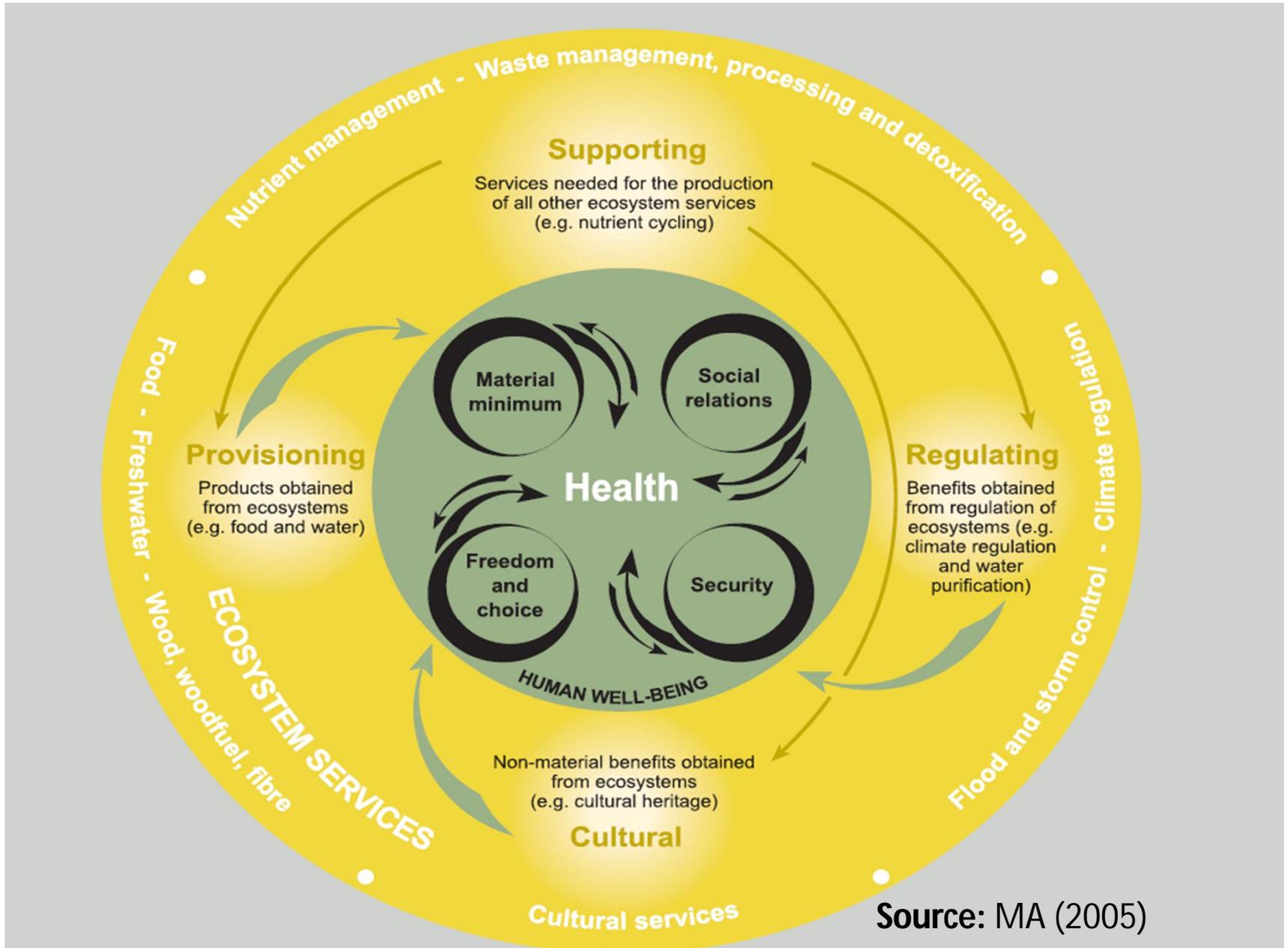
year

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



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**.

# Ecosystem services in danger



# 5. What will extend and deepening the relation between sustainability and 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)

12. Why is a 'way of life', a **cosmvision** and a **culture** that is based on a waste of non-renewable resources not sustainable, and which changes in production & consumption are necessary for a transformation to sustainability?
13. Which fundamental change in the **worldview** & **scientific innovation** are necessary for a long-term transformative change towards sustainability?
14. Why does the persistence of the present **mindset** in the framework of **business-as-usual** in a patriarchal world obstruct the necessary strategies of a long term transformation (LTT) of the state, economy and society?
15. Which changes in the mindset of **political and economic elites** are needed to overcome **interest-driven obstacles** against a LTT toward sustainability?
16. Why are the dominant structures and political decision-making processes unable to promote steps towards a 'fourth sustainability revolution' and which changes in politics and action (**governance**) would be needed for a LTT?
17. From the peace research, which changes in **culture, in worldview, mindsets and in governance** are needed to avoid that during this fourth sustainability revolution the **goal of a sustainable peace is endangered**?

- Transformation from the dominant vision of business-as-usual towards a **sustainable vision in a multilateral cooperative** world.
- **Solidarity, equity, social justice and energy efficiency** are key drivers.
- Instead of maximization of profits and overexploitation of natural resources the **next generations** and the consolidation of **ecosystem services** are in the centre.
- GEC poses primarily challenges for **human, gender and international security** that can only be overcome by human ingenuity and change of cosmovision. However, COP 15 - 17 have shown that **key mental, economic and political obstacles** must be overthrown to prevent security dangers often triggering violent conflicts on scarce and polluted resources.

# Paz Sustentable

