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Water and Environment in GCC: New Imperatives

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Outline

1. Context
2. **State**
3. **Pressure**
4. **Response**
5. Water-Environment and culture
6. Key messages

1. Context

Global Challenges: must be addressed for reaching a sustainable future

People & Values



Governance



Economy



Resources, Energy & Environment



Shifting demographics



Interdependent world



Valuing social & environmental impacts



Resource scarcity



Environmental degradation



Poverty & inequity



Inadequate policy framework



Material-based consumption



Energy security

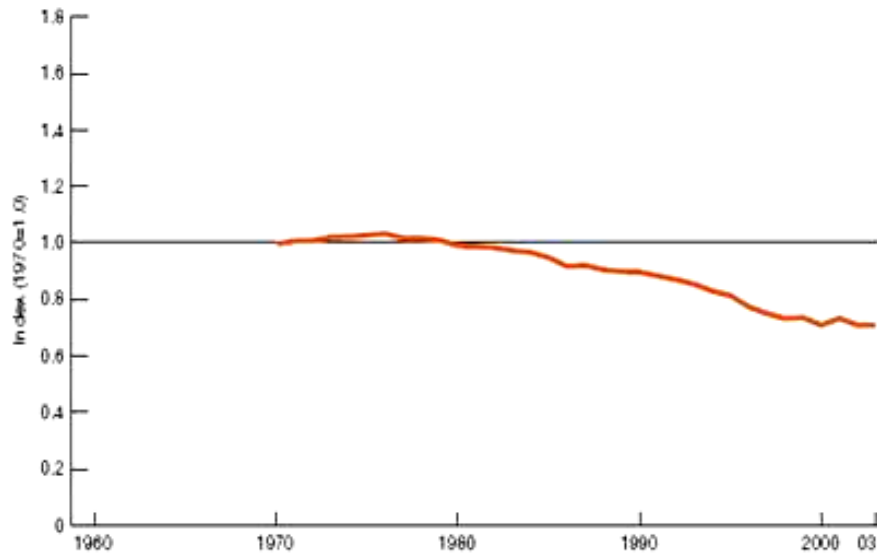


Climate change



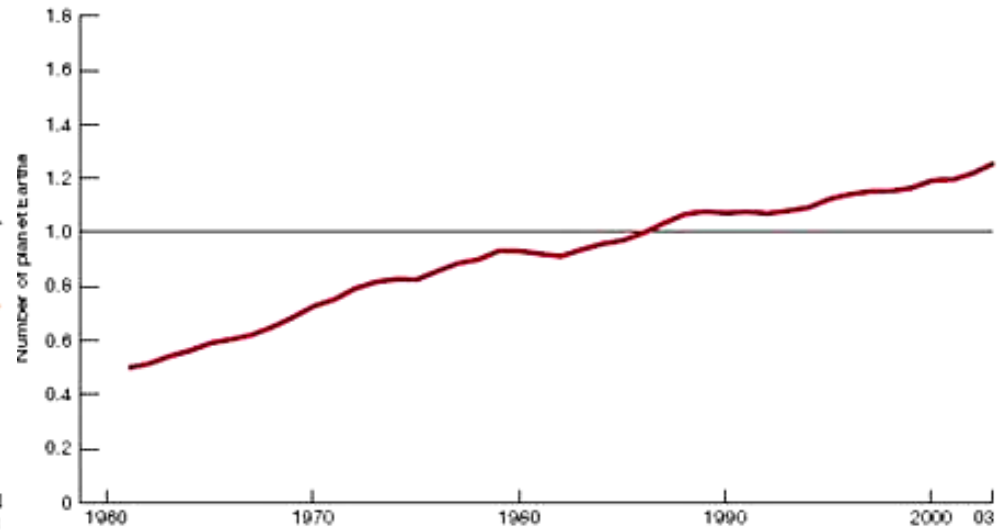
Natural Capital

Fig. 1: LIVING PLANET INDEX, 1970-2003

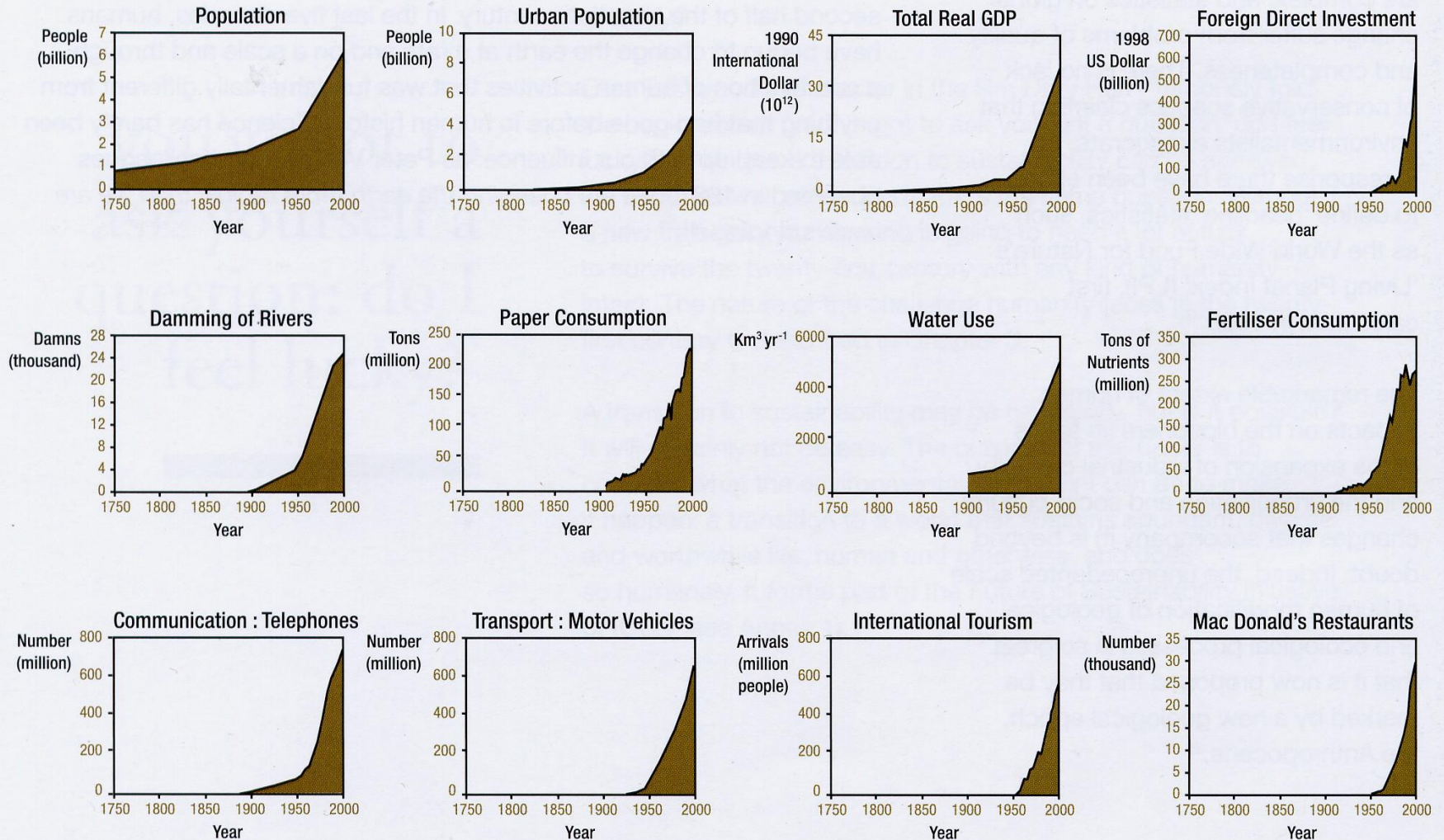


Our Global Impact

Fig. 2: HUMANITY'S ECOLOGICAL FOOTPRINT, 1961-2003

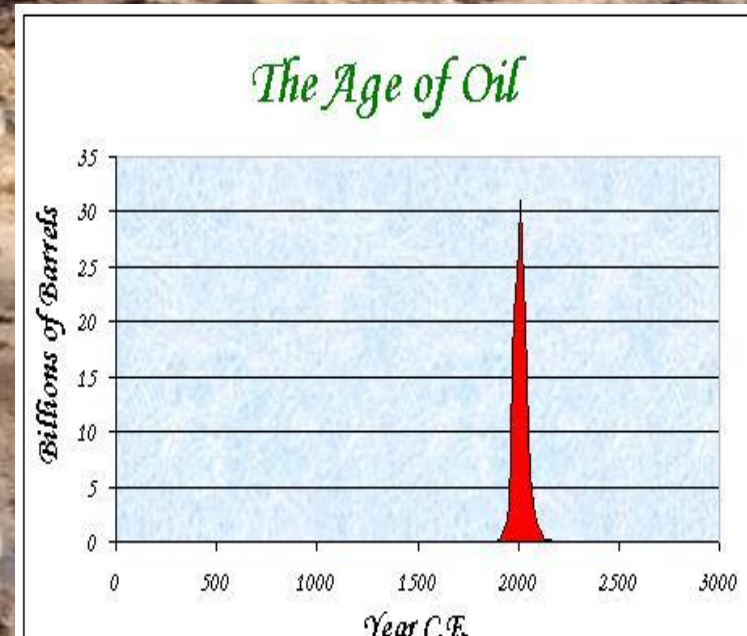
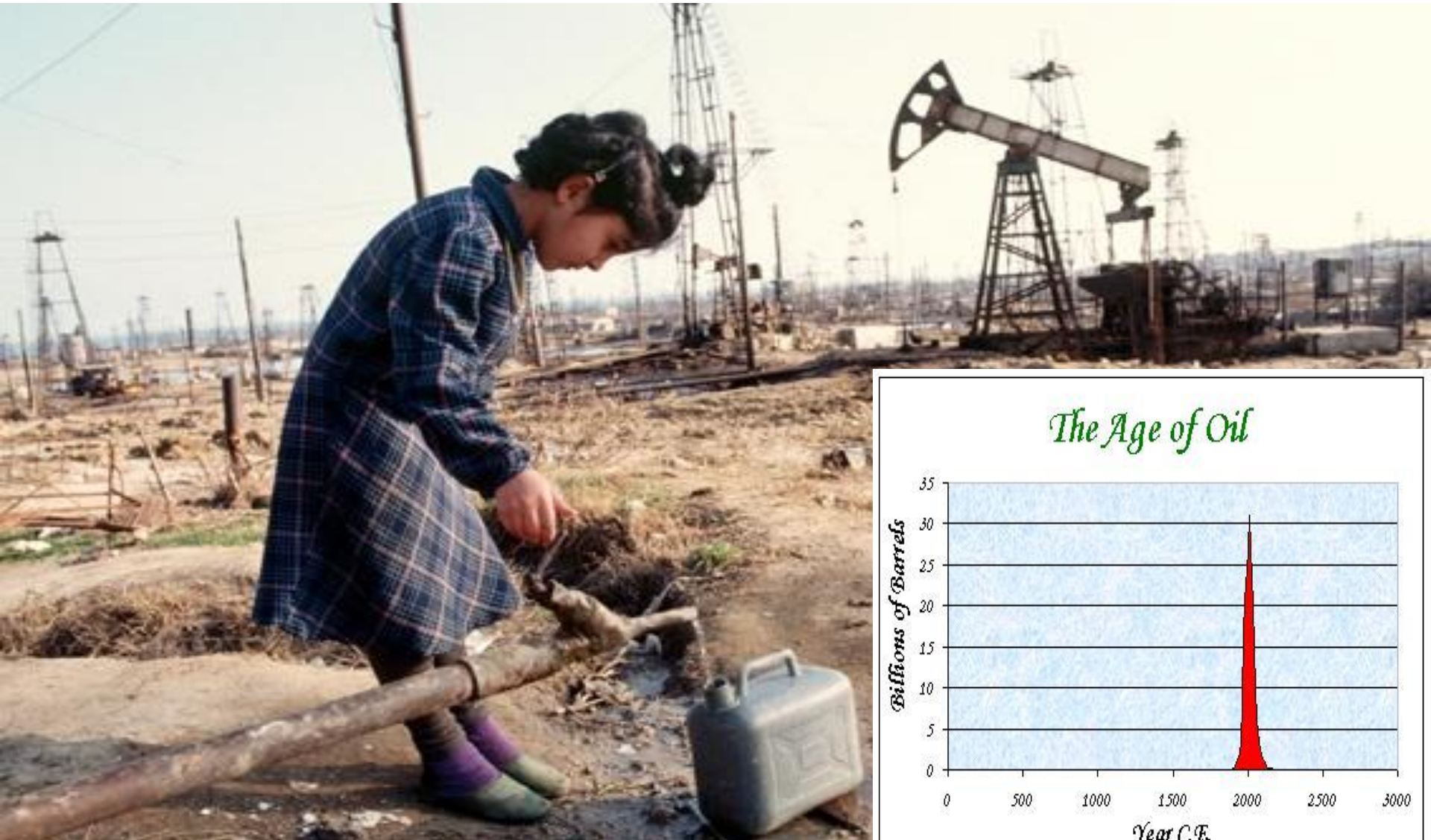


The Great Acceleration

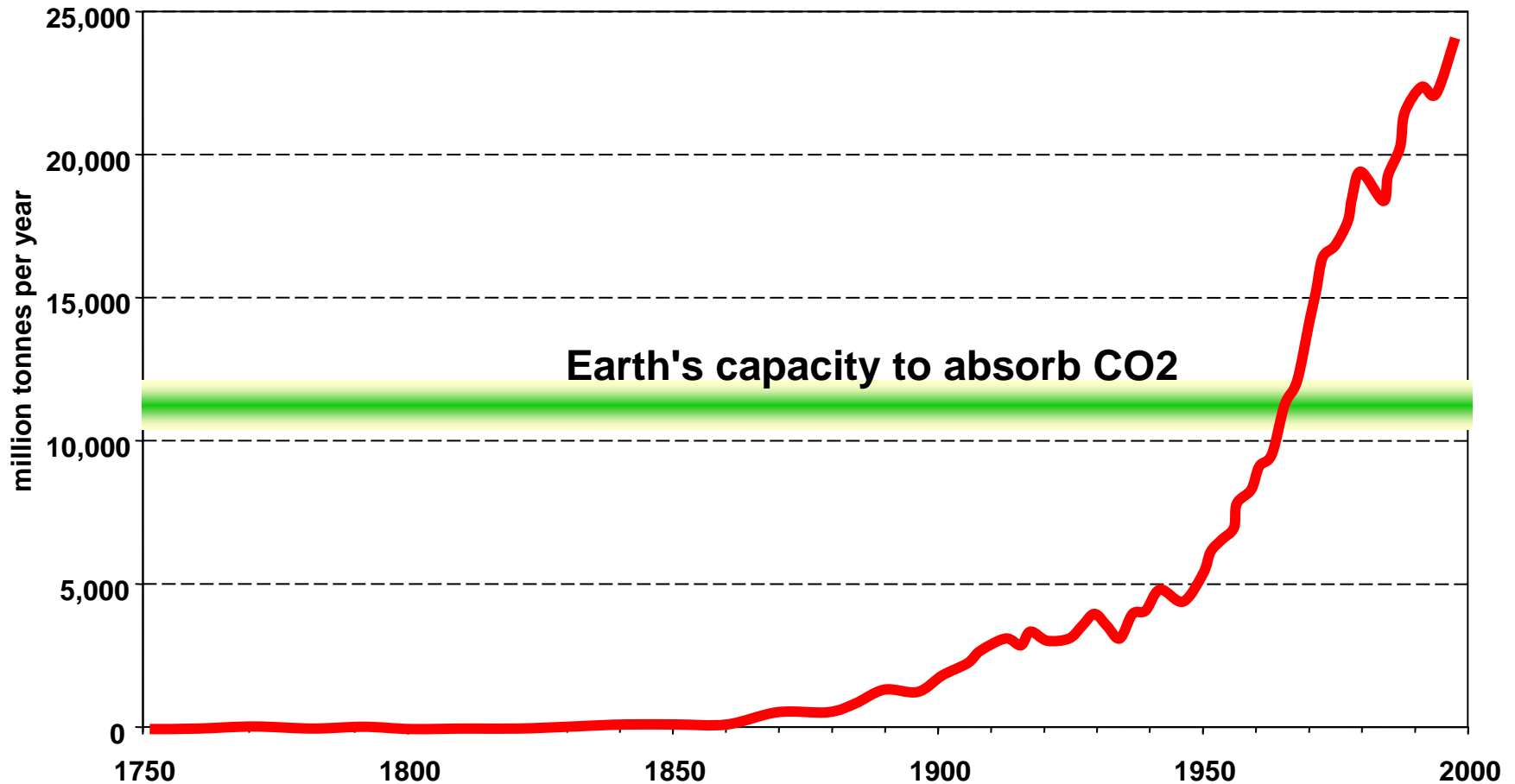


Source: Steffen et al. (see note 20)

ENERGY



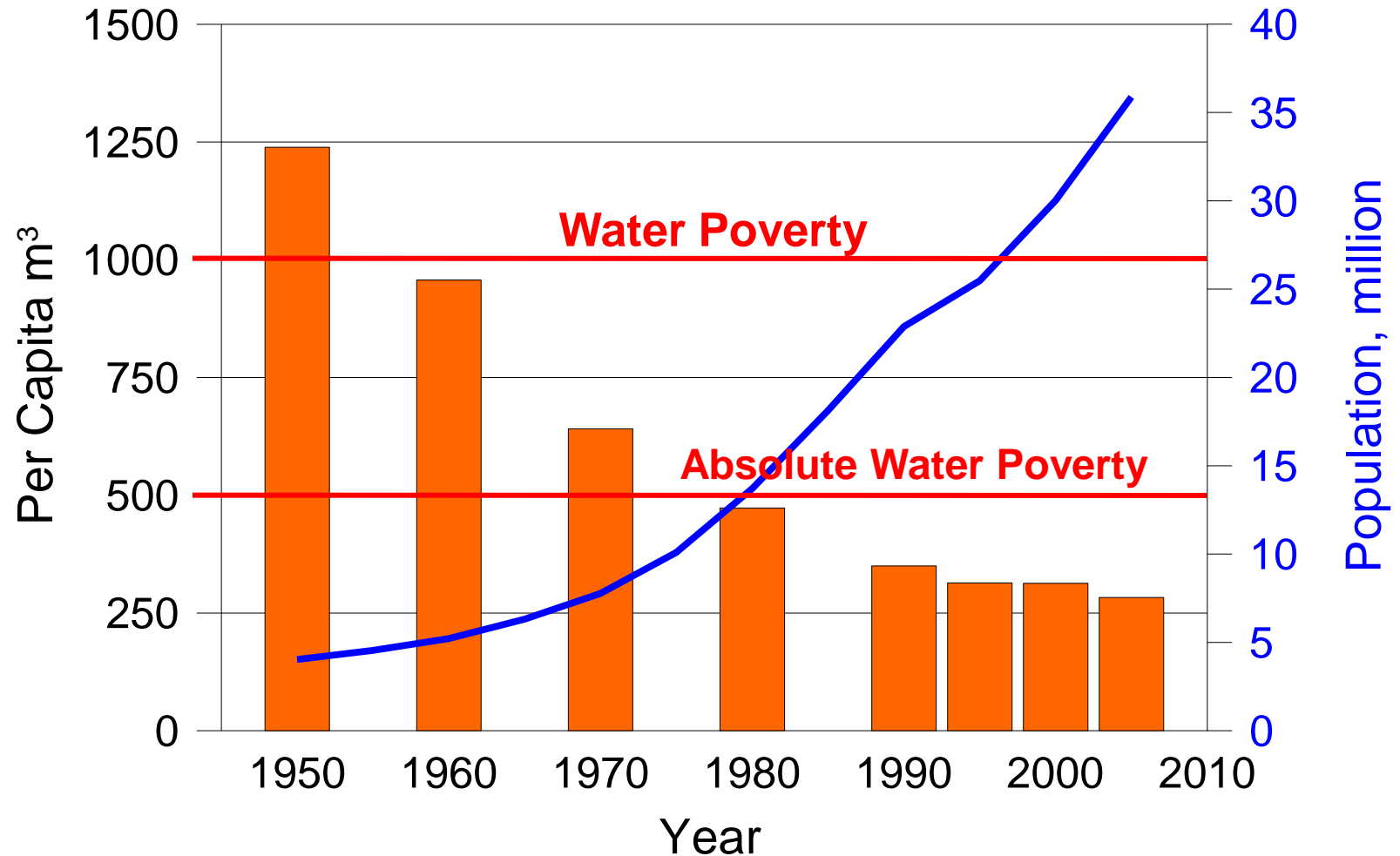
World CO₂ Emissions From Fossil Fuels 1750-1997



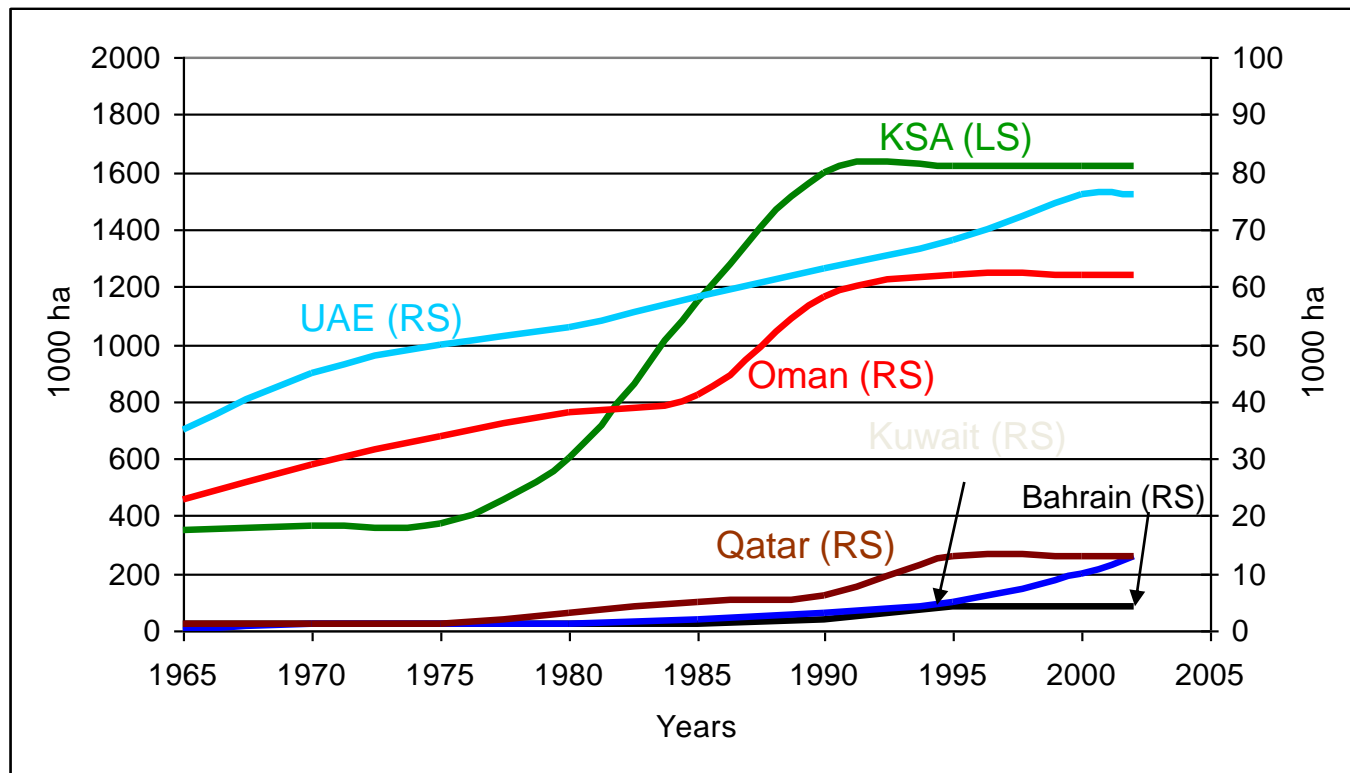
What About the Ethics?



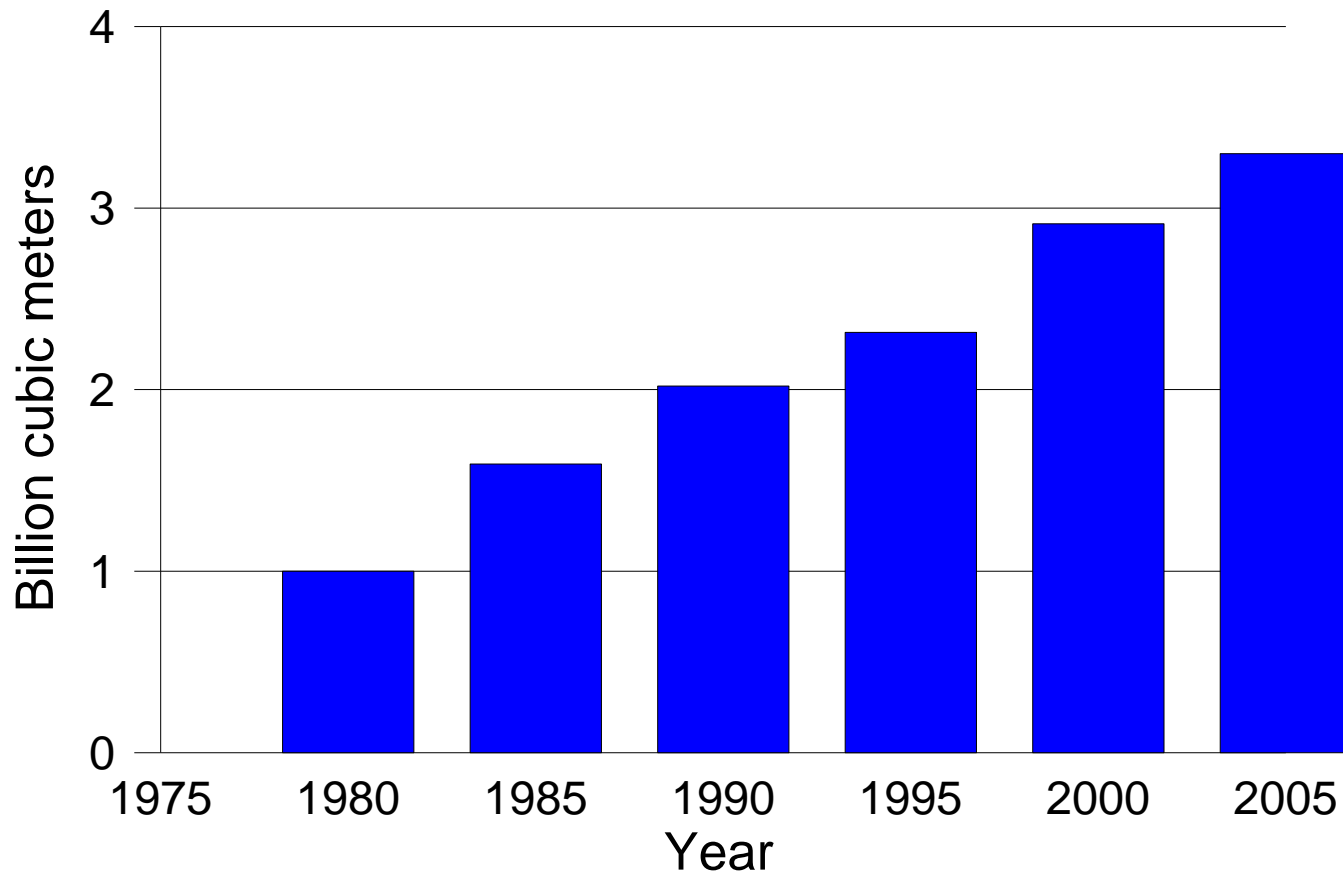
Per Capita Available Water Share in the GCC, 1950-2005



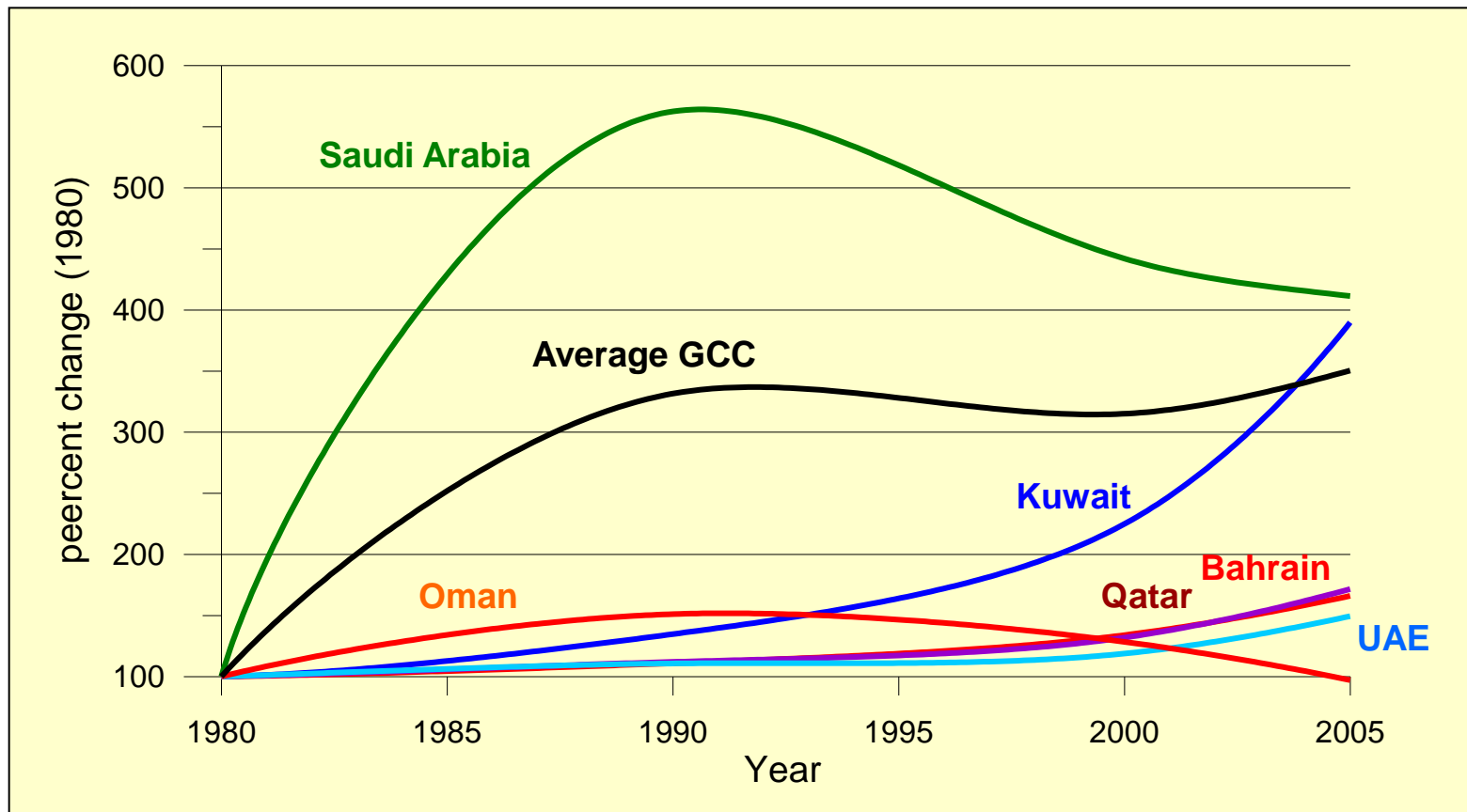
Increase in Areas under Irrigation in the GCC, 1965-2002



Development of Desalination Capacity in GCC, 1980-2005



Trends in per capita total water consumption (agricultural, municipal, and industrial) in the GCC countries (1980-2005)



3. Pressure

Ecological footprints....

Global average: 1.8 ha/person

UAE: 11.9 ha/person

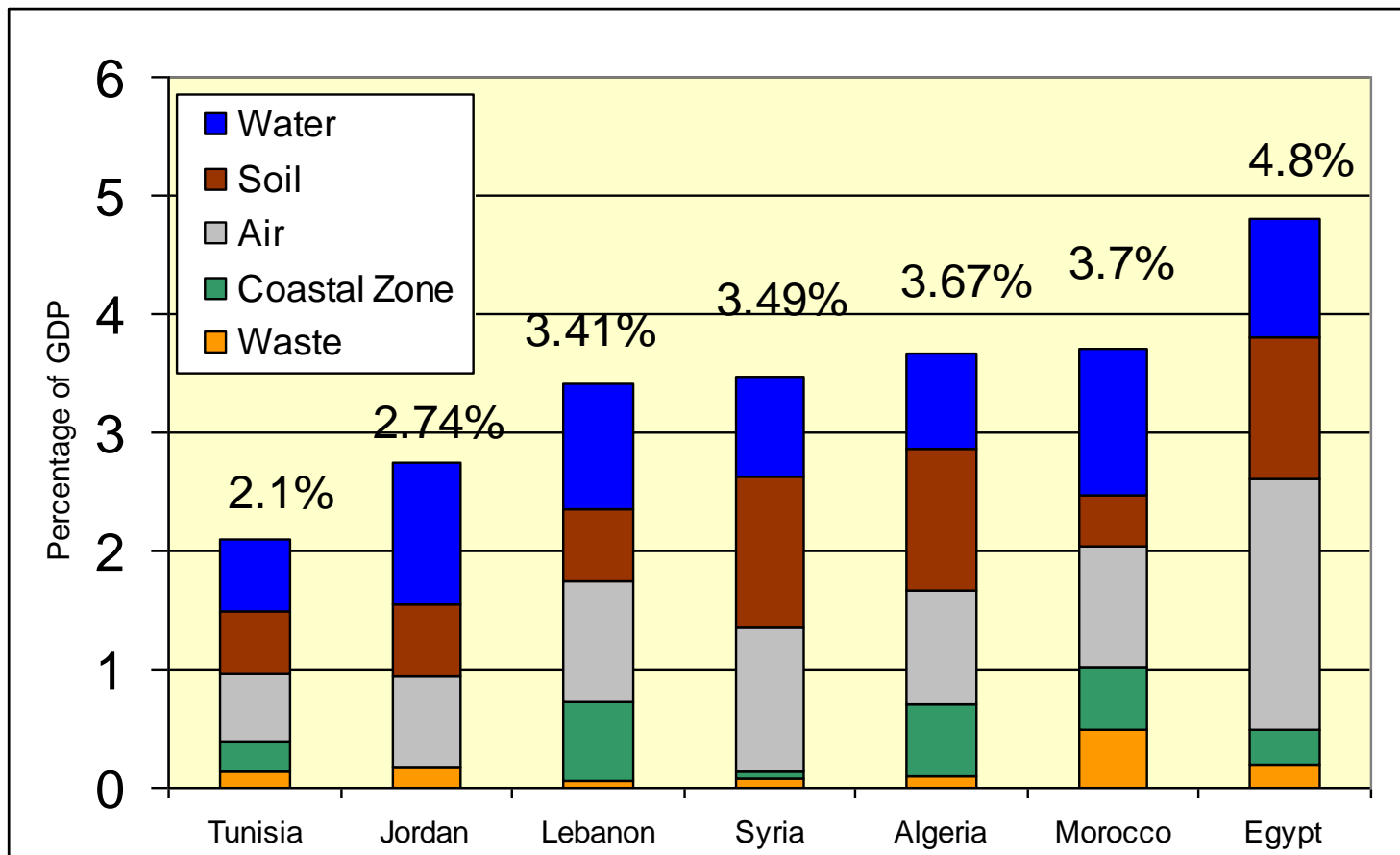
Kuwait: 7.6 ha/person

KSA: 4.6 ha/person

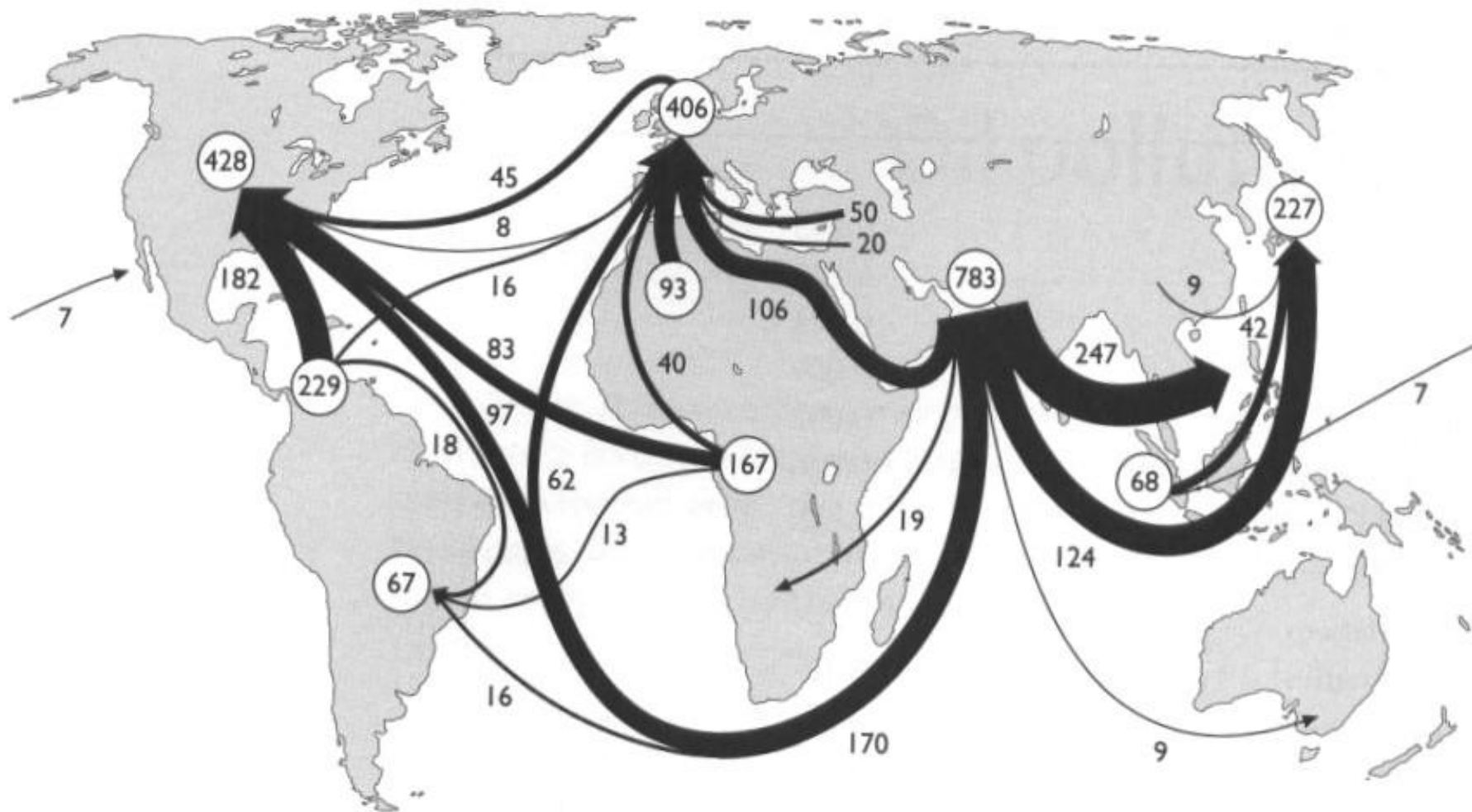


The Cost of Environmental Degradation in the MNA countries

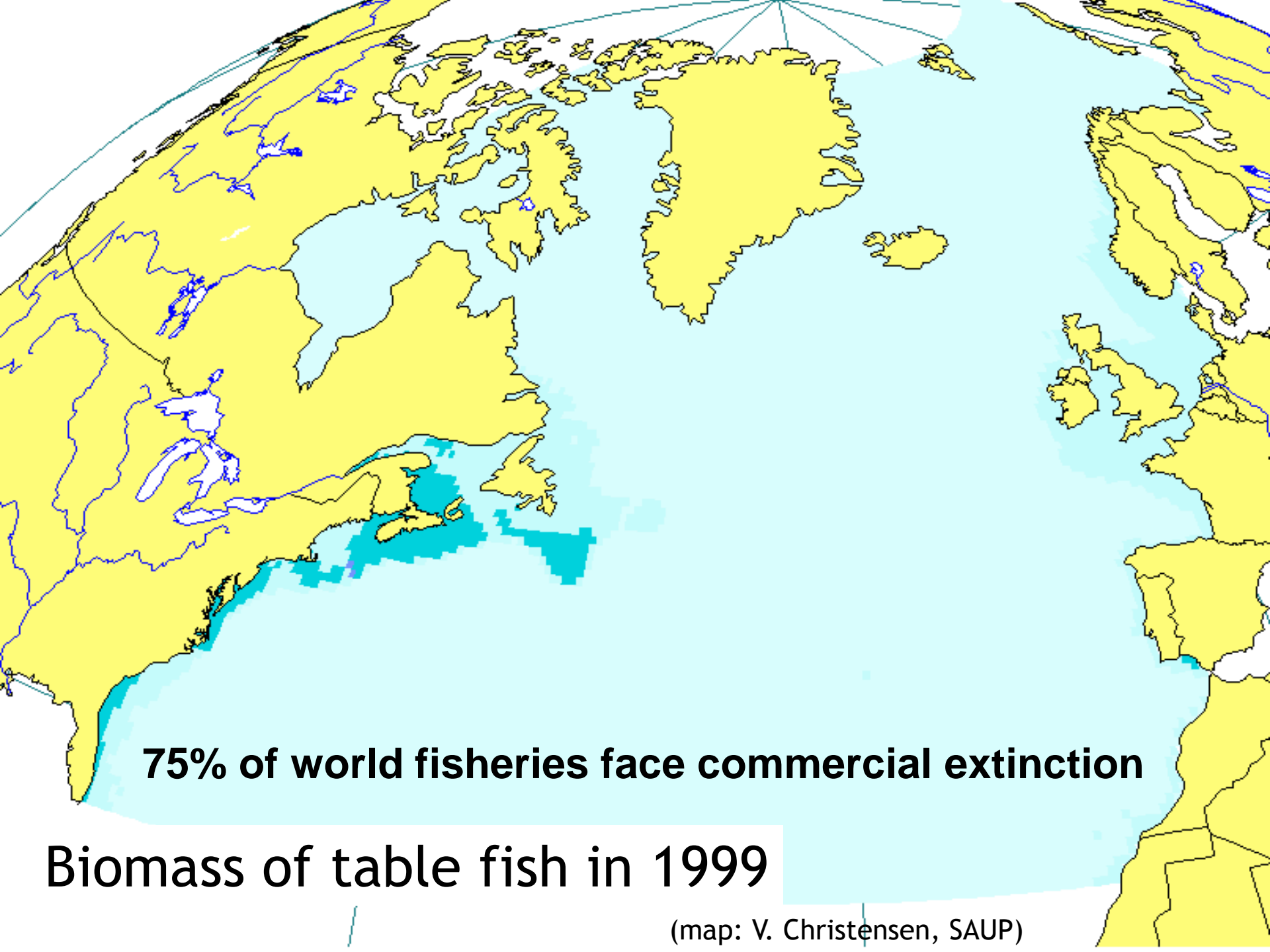
Environmental Category: Percentage of GDP



Source: Sarraf, METAP reports 2001-2006



Oil Tanker Routes 1997 (millions of tonnes)



75% of world fisheries face commercial extinction

Biomass of table fish in 1999

(map: V. Christensen, SAUP)

Extinction crisis and the blind spot..

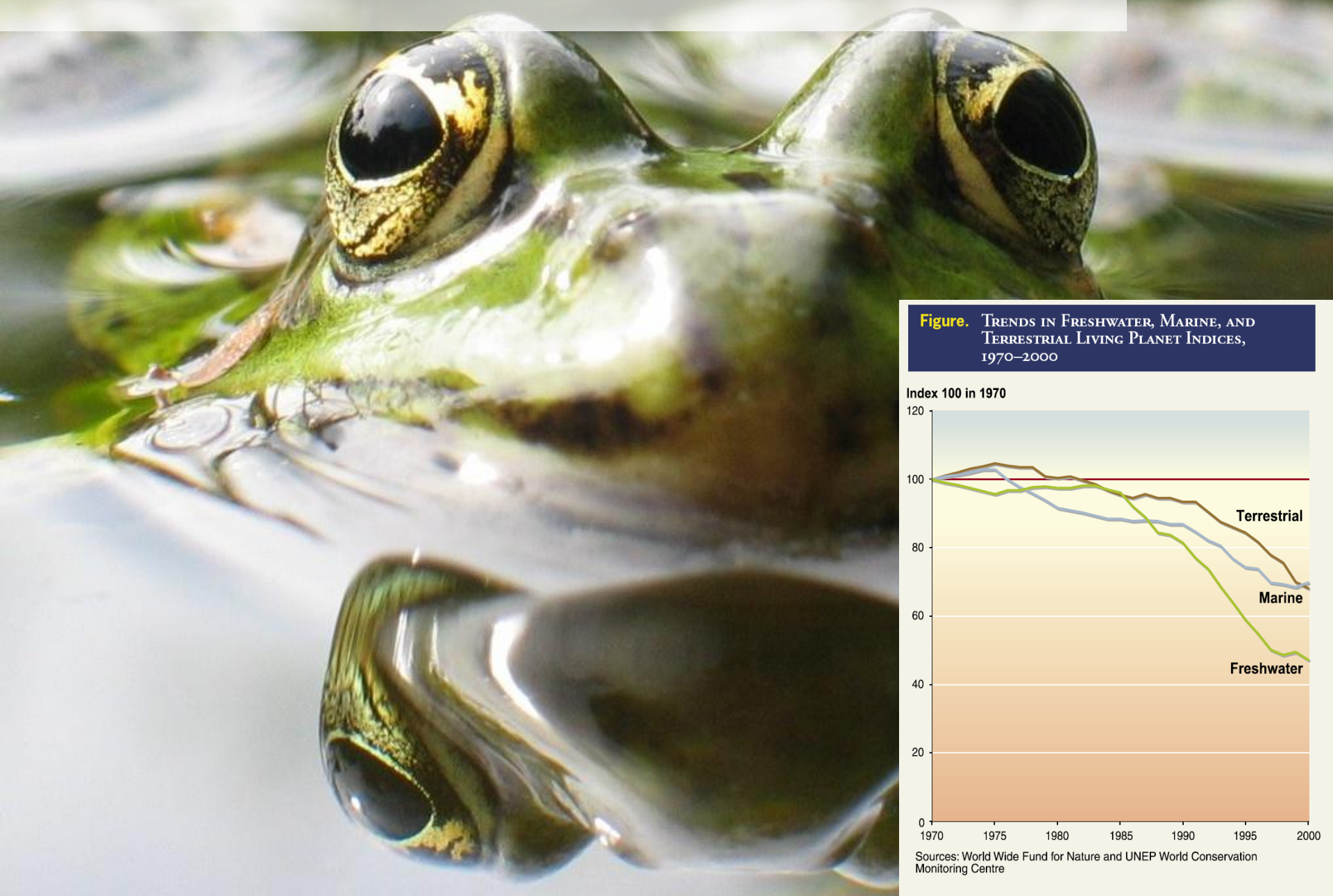
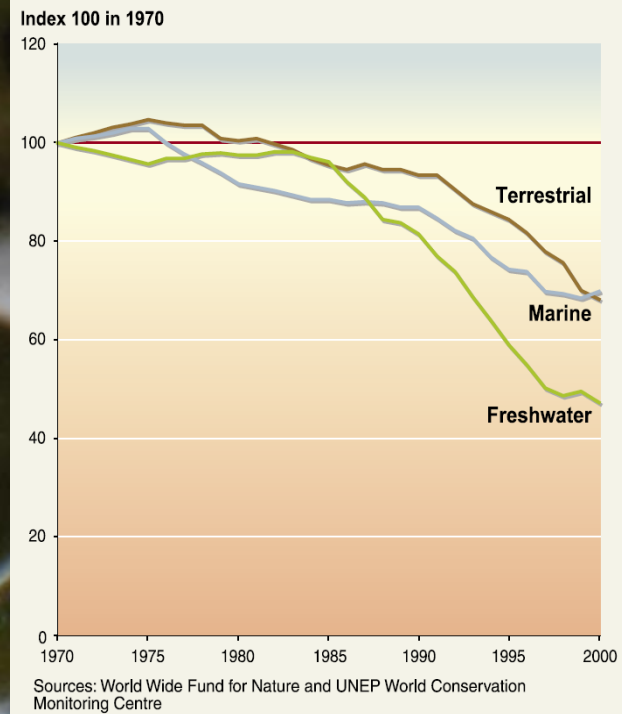


Figure. TRENDS IN FRESHWATER, MARINE, AND TERRESTRIAL LIVING PLANET INDICES, 1970–2000



Impact of oil on organisms

- Marine turtles
 - Disturbance to nesting habitat
- Special habitats
 - coral reefs
 - mangrove forests



3. Response

- New Deal
- Green Economy
- New Community of Water and Energy
- Defining Regional Commons (3 shared public goods)

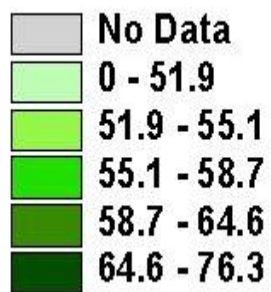
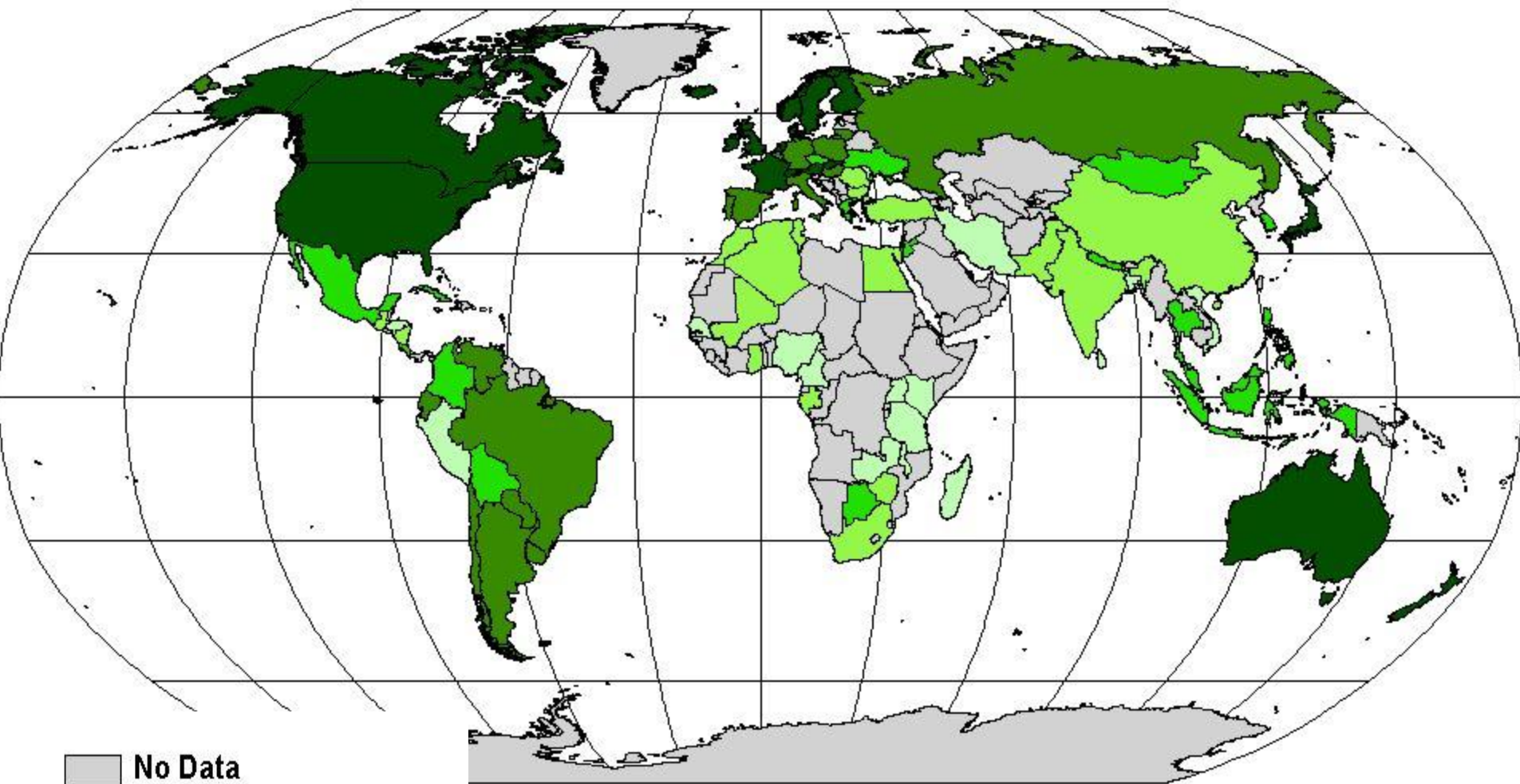
10 IMPERATIVES

Imperative #1: New Metrics

« Capitalism may collapse because it does not allow the economy to tell **the ecologic truth**..» *Lester Brown*

- *Thinking beyond GNP*
- *Considering SDI and HDI*
- *Distinction between Growth & Development*





High numbers correspond to greater levels of environmental sustainability

IT'S TOO HEAVY

IT CAN'T FLY!

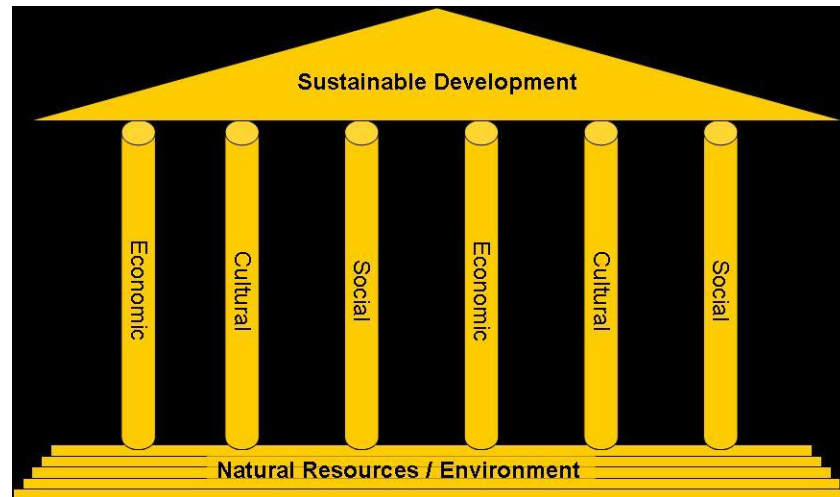
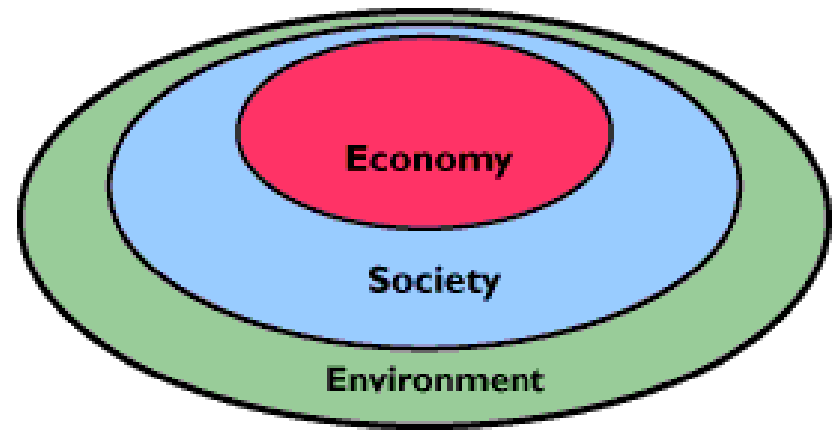
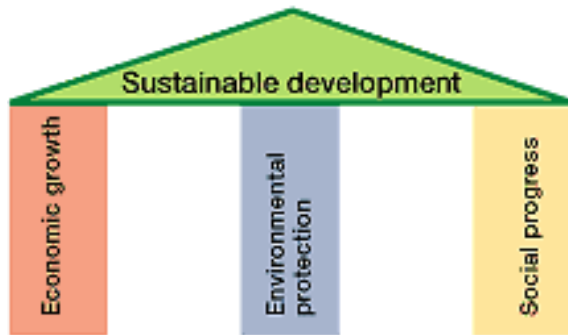


Imperative # 2: Redefining Sustainable Development

Green growth is about attaining the balance in all capitals: (Tayebah Development)

ENVIRONMENT	(natural capital)
SOCIETY	(social capital)
TECHNOLOGY	(manufactured capital)
ECONOMICS	(financial capital)

**The three pillars
of sustainable development**



Imperative #3: R&D and STI

- R&D in clean and nano-technology
- Hydro-informatics and modeling
- **Energy and water conservation**
- Disaster management and protection of nature
- **Measuring our ecological footprints**
- **Civic activism and access to information**
- e-Learning and communication
- Bio-mimcry
- KISR. KAUST, KACST, Qatar Foundation, MASDAR



Technical
Metabolism



Biological
Metabolism

Source: Michael Braungart, Cradle to Cradle Design

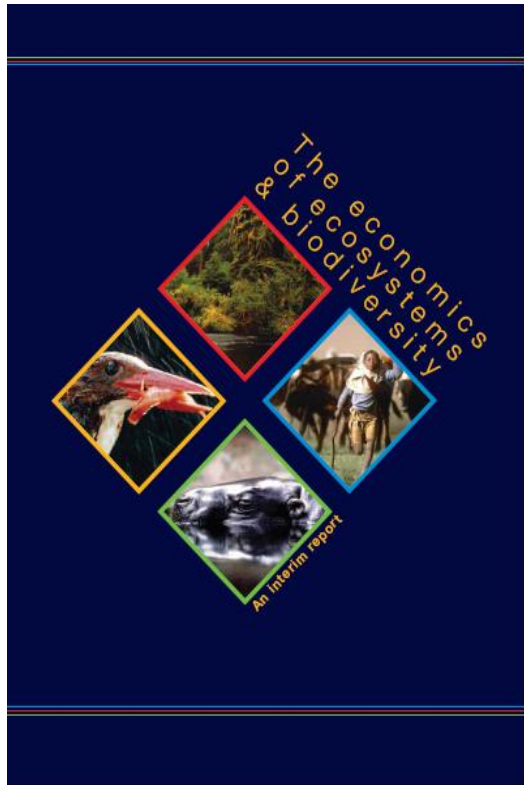
Imperative #4: Investment in Green Economy...

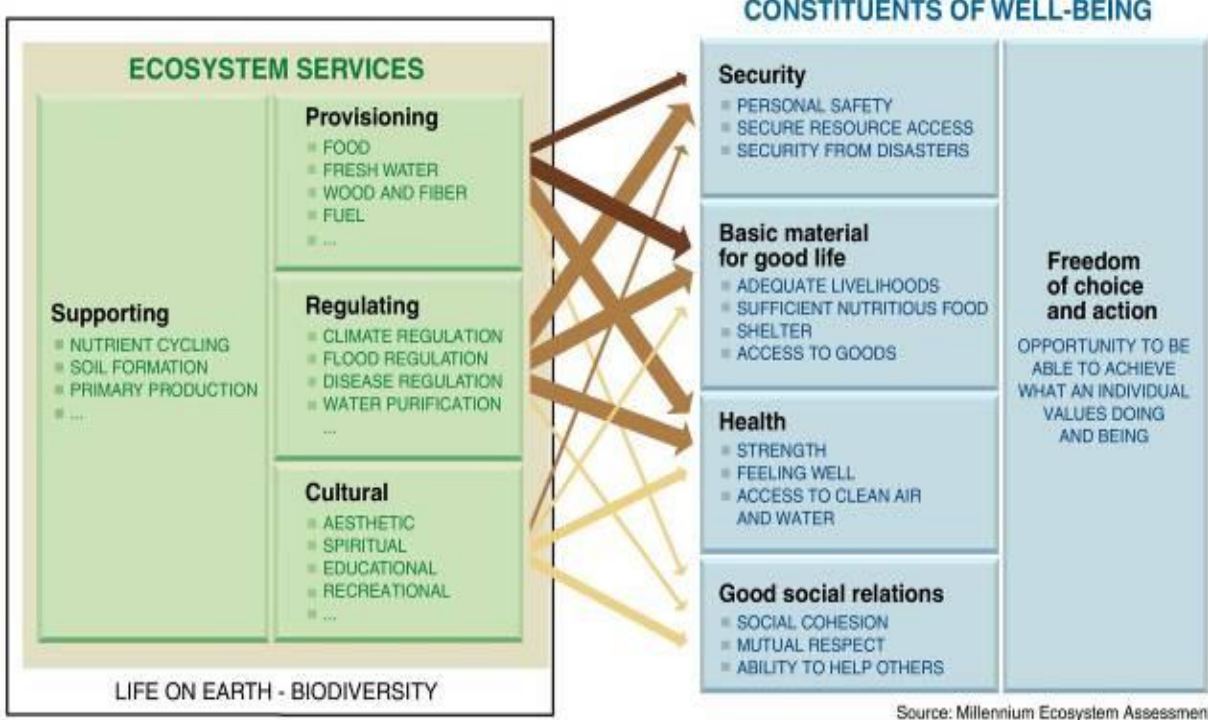
Cost of Gulf war

Lost opportunities in STI



Imperative # 5: Valuing Ecosystems





Why?

Income

Nutrition

Health

Livelihoods

Water supply

Disaster risk
mgt

Jobs

Economic
growth



Imperative # 6: The region as a unit of analysis

- Graduate program in regional science
- Regional infrastructures (water, oil, gas, train).
- Beyond GCC
- Community of water and energy
- Green Investment for Regional Commons

Imperative # 7: Climate change response

2.4 % contribution of GCC to climate change

Opportunities to benefit from Carbon Credit- CDM (UAE and Qatar)

Direct Natural Exposure: 1800 kw/ hr/ square meter

Oil prices do not consider the external cost of climate change



Water & Climate Change

- Make the complex manageable
 - implement 'resilience in practice'

Bahrain may lose 15 km of coast line due to climate change

Imperative # 8: Local knowledge

- What constitutes a good life (*Hayat Tayebah*)?
- How can we contribute to construction of Universe (*Emaratu Al Kawn*)?
- How can we promote living lightly on Earth (*Zohd*)?

Imperative # 9: The Energy Imperative

Demand-led related diversification

Demand-led innovation

Green buildings and energy savings

Green jobs and eco-innovations

R&D in green technology

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Demand-led related diversification

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Green buildings and energy savings

Green jobs and eco-innovations

R&D in green technology

The World is not just “Flat,” it is “Hot and Crowded,” too!



THOMAS L.
FRIEDMAN
*Hot, Flat,
and Crowded*

WHY WE NEED A GREEN REVOLUTION —
AND HOW IT CAN RENEW AMERICA



*If total energy is conserved, why are
we worried about energy shortages?*

Imperative # 10: The Food Imperative

Moving people to Water versus moving people to water.....

Moving food to people or moving water to people


Key messages

Rio + 20.....what is our role...



New Deal

- **New policies and institutions that protect our natural capital (*hima*; *Trade and Environment*; *IP*, *subsidies*, *access to markets*)**




**People-centred
Development**

- **Responsible development (*tayebah*)**



**Well-being
Society**

- **Change consumption patterns (*zohd*)**



**Ecological
Restoration**

- **Civil society and firms will help restore the planet (*ijtihad*)**

Thank you