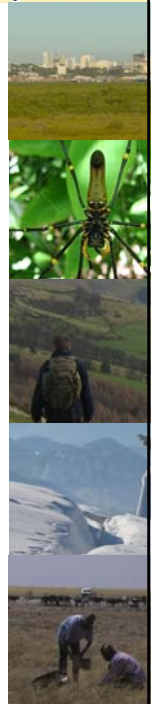


Session 34: Adapting Human Land Use to Climate Change

IARU Climate Congress Copenhagen March 9-12, 2009

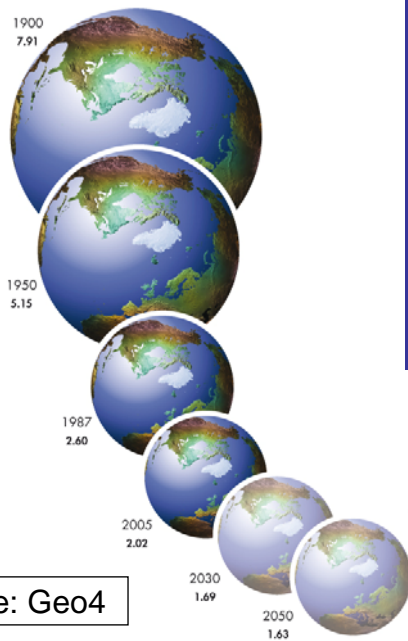
Anette Reenberg, GLP-Chair
Professor, Department of Geography and Geology,
University of Copenhagen



Humanity is a major force reshaping the Earth's surface, atmosphere, and biogeochemistry, e.g. though use of land

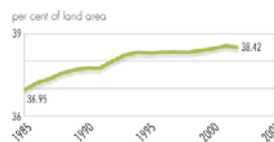
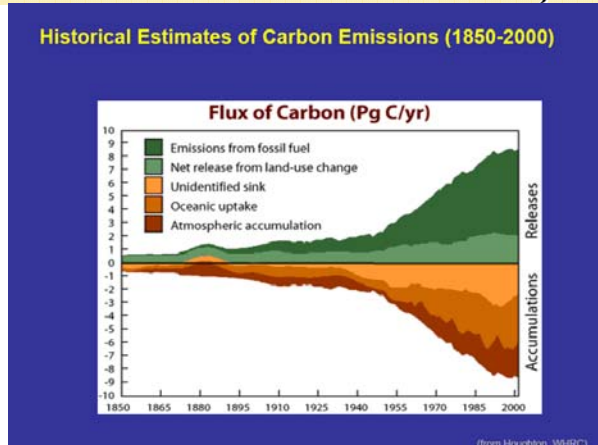


Figure 8.1 Our "shrinking" Earth



Source: Geo4

Historical Estimates of Carbon Emissions (1850-2000)



Notes: Numbers next to images of Earth reflect hectares of land per capita.
 Graphs show changes in trade volume (1987-2005), GDP (1987-2004), CO₂ emissions (1990-2003) and agricultural land area (1987-2002).

Sources: FAO/STAT 2006, Chapter 9 population projection, WTO 2007, GEO Data Portal compiled from UNFPA 2007/low estimate, World Bank 2006a, UNFCCC/CDIAC 2006 and FAO/STAT 2004



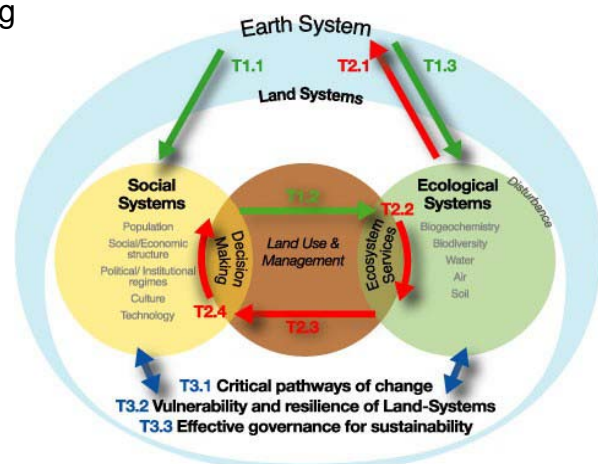
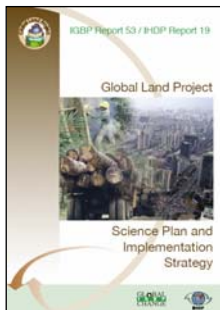
Joint Research Agenda of IGBP and IHDP



Session rationale



- Human land use is linked to climate variations in complex ways.
- Hence, insight in the dynamics of human land use is critical for :
 - modeling greenhouse gas emissions, carbon balance, and ecosystems
 - conceptualizing the dynamics of the coupled human-environmental interaction in the global land system
 - and for adaptive decision making



Human land use – climate perspectives



- Cause of global climate change
 - Biophysical: surface heat balance, aerosols
 - Biogeochemistry: carbon balance, greenhouse gasses
- Enabled or constrained by global climate change
 - Altered natural potential for plant production
 - Adaptation to new societal demands
 - Providing new products (eg biofuel)
 - Providing new services (eg carbon sequestration)