Sustainability

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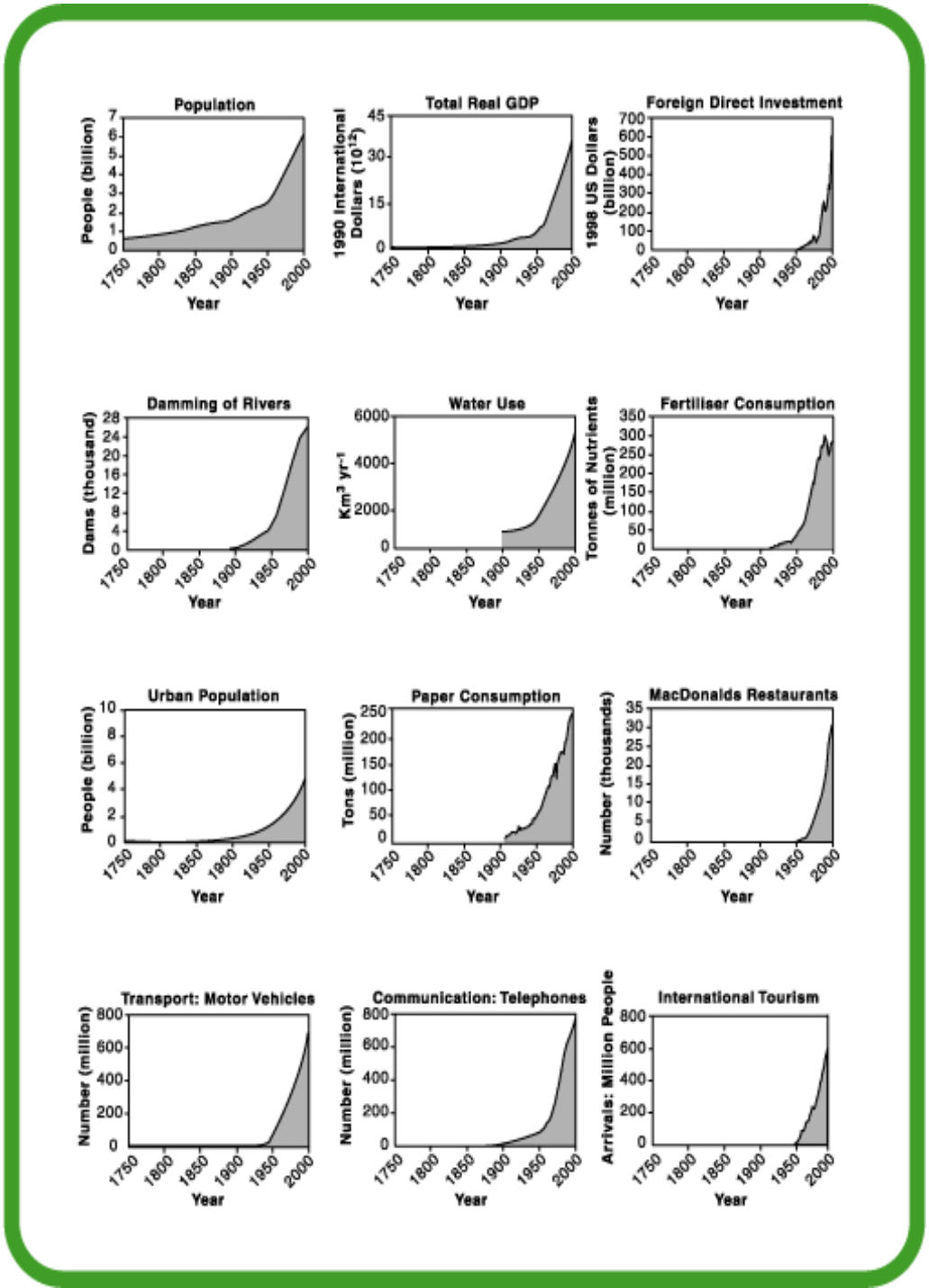
Natural
Environment
Sustainability
Economic
Vitality
Healthy
Communities


1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
THE GLOBAL GOALS
For Sustainable Development
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE AND JUSTICE STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS

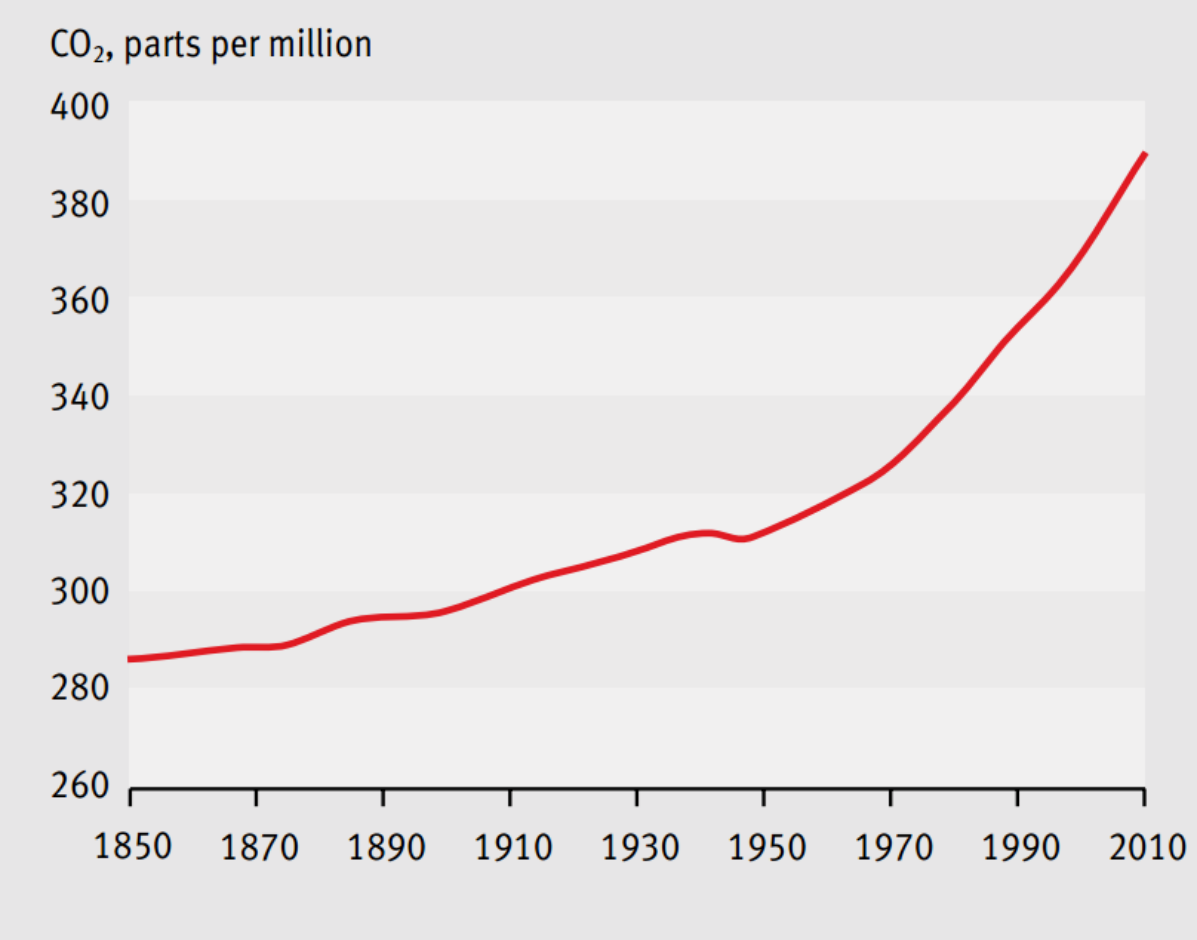
The last 250 years in a snapshot



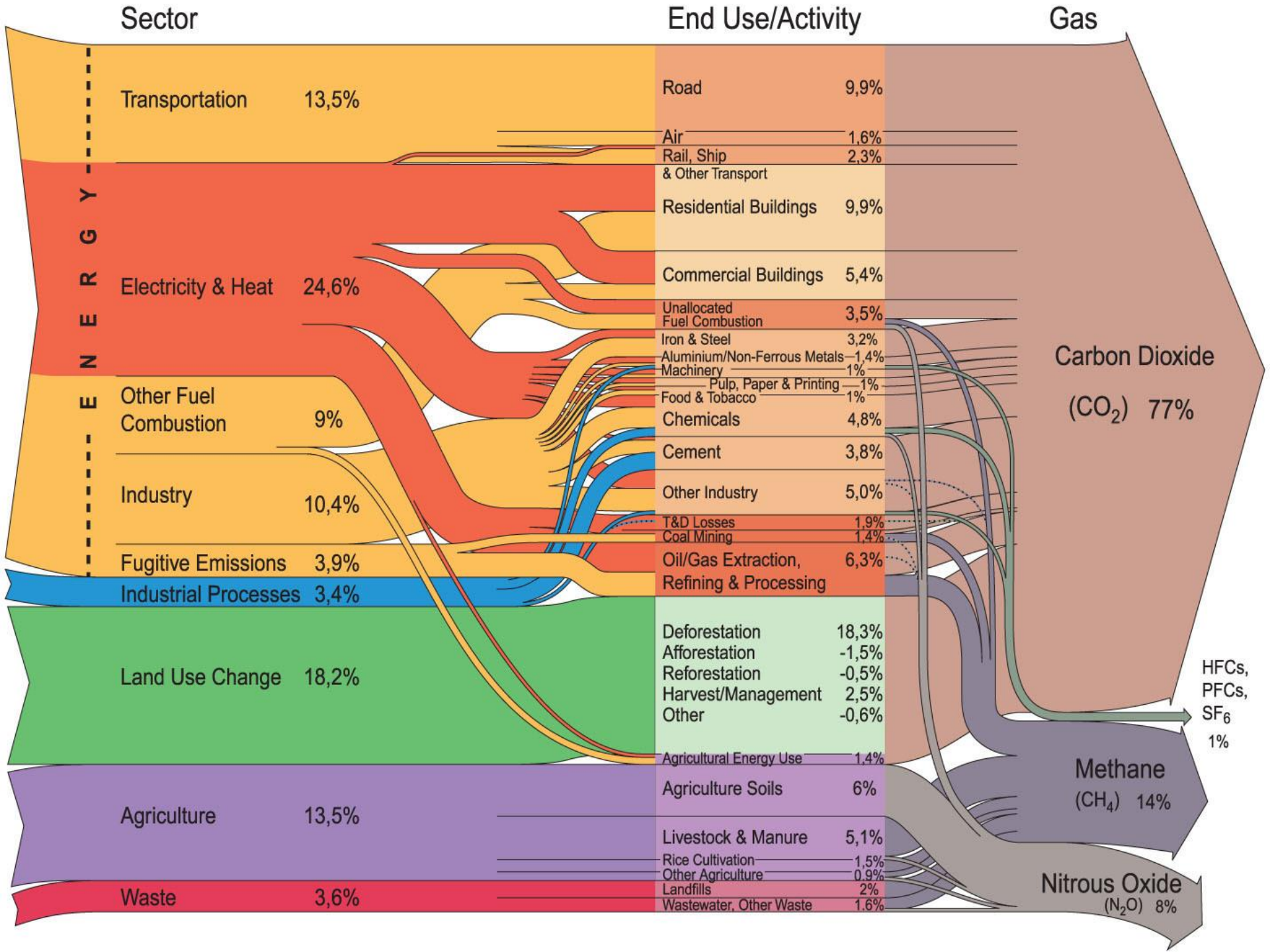
Dramatic global trends

- The climate is changing. We just had a real dry summer
- GHG emissions must peak in this decade
- Resource prices may increase dramatically
- There are no signs of upcoming significant economic growth in the OECD countries
- The middle classes will explode in numbers in the emerging economies
- Technology can to an extent help us.
- Fundamental changes in consumption patterns are vital
- The role of agriculture and land use must change fundamentally

CO2 in the atmosphere



Source: GEO5


Sector
End Use/Activity
Gas
ENERGY
Transportation 13,5%
Electricity & Heat 24,6%
Other Fuel Combustion 9%
Industry 10,4%
Fugitive Emissions 3,9%
Industrial Processes 3,4%
Land Use Change 18,2%
Agriculture 13,5%
Waste 3,6%
Road 9,9%
Air 1,6%
Rail, Ship & Other Transport 2,3%
Residential Buildings 9,9%
Commercial Buildings 5,4%
Unallocated Fuel Combustion 3,5%
Iron & Steel 3,2%
Aluminium/Non-Ferrous Metals 1,4%
Machinery 1%
Pulp, Paper & Printing 1%
Food & Tobacco 1%
Chemicals 4,8%
Cement 3,8%
Other Industry 5,0%
T&D Losses 1,9%
Coal Mining 1,4%
Oil/Gas Extraction, Refining & Processing 6,3%
Deforestation 18,3%
Afforestation -1,5%
Reforestation -0,5%
Harvest/Management 2,5%
Other -0,6%
Agricultural Energy Use 1,4%
Agriculture Soils 6%
Livestock & Manure 5,1%
Rice Cultivation 1,5%
Other Agriculture 0,9%
Landfills 2%
Wastewater, Other Waste 1,6%
Carbon Dioxide (CO_2) 77%
HFCs, PFCs, SF_6 1%
Methane (CH_4) 14%
Nitrous Oxide (N_2O) 8%

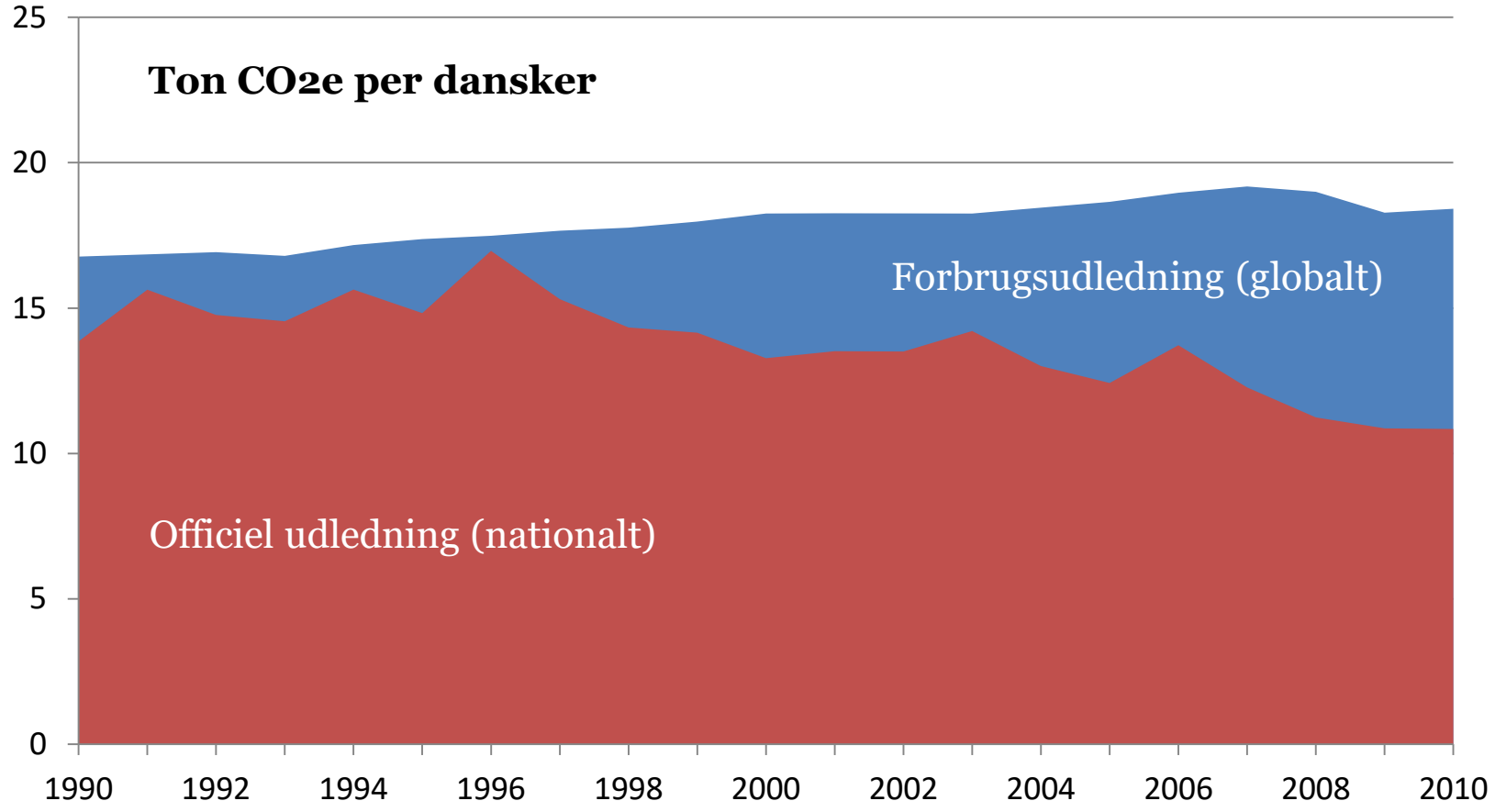
Megatrend: limited resources

*GHG = Population * consumption* GHG efficiency + land use*

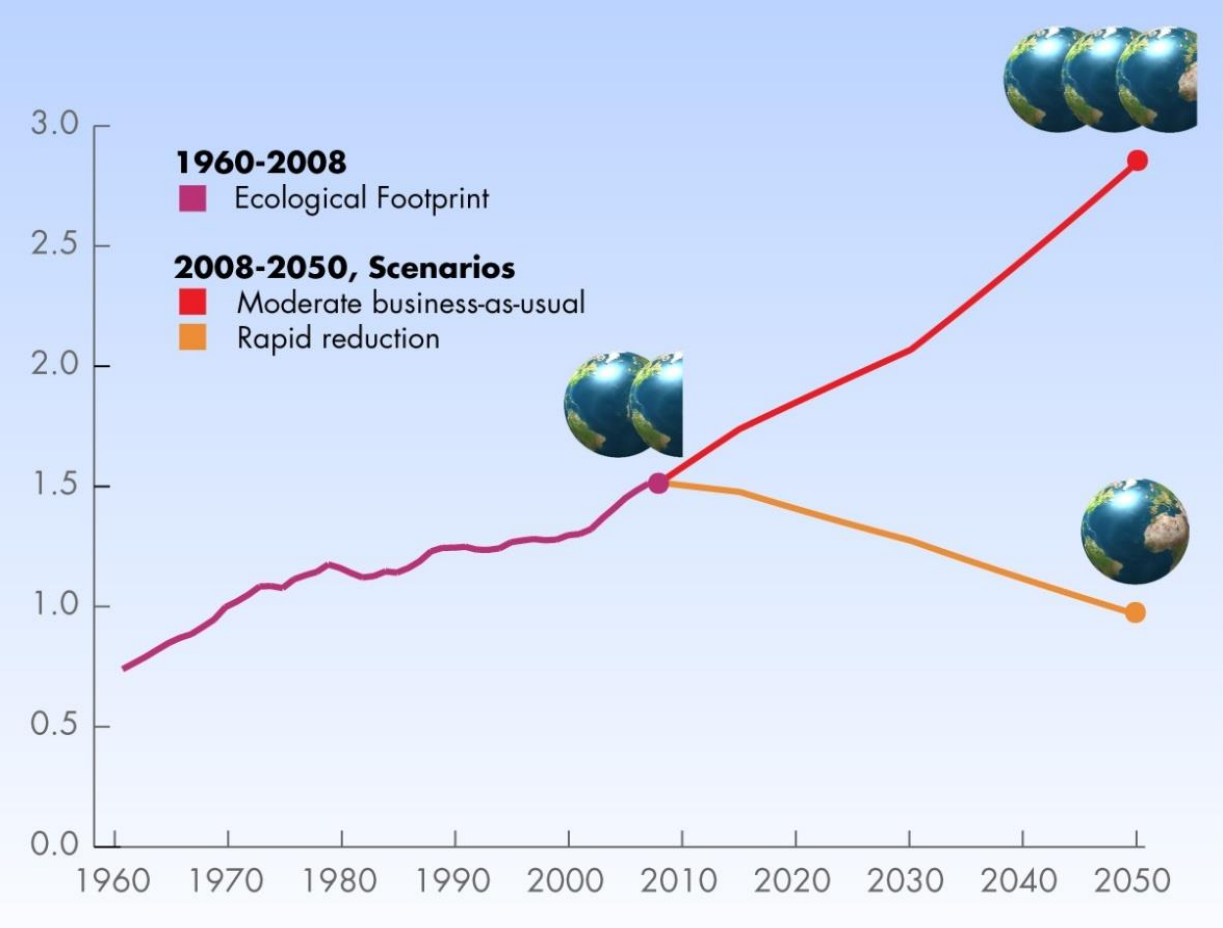
GHG efficiency has to increase with a factor 6-10 if technology alone shall save us…

Clearly, consumption patterns and land use are vitally important.

The Danish GHG emissions



Global footprint



y-axis: number of planet earths, x-axis: years

Global footprint

Denmark

Global Footprint Network®
Advancing the Science of Sustainability

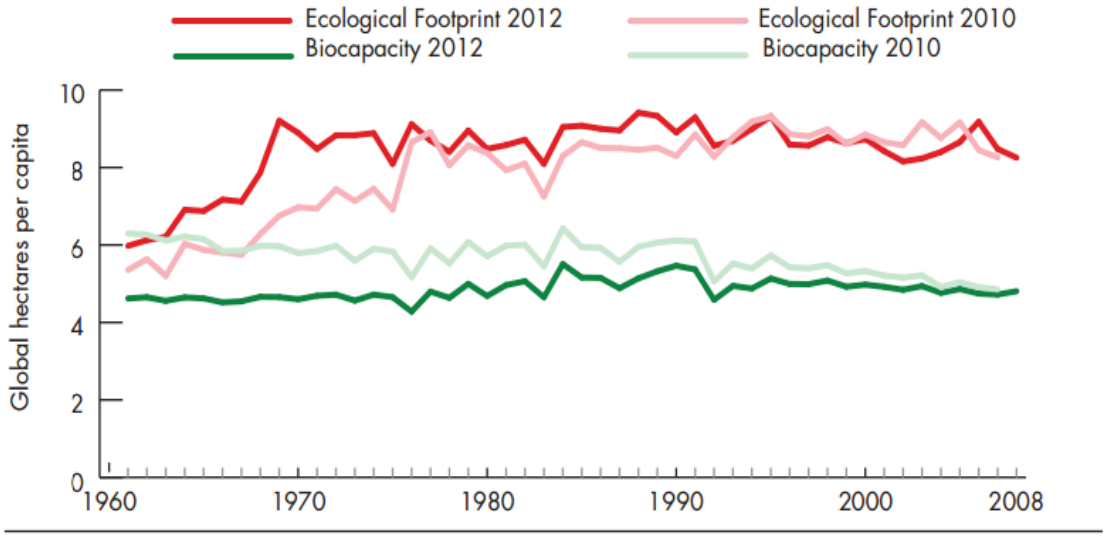
The aim of this factsheet is to give an overview of the Ecological Footprint and biocapacity within each country to give both some facts and figures and to help to explain why the results and country rankings in the LPR 2012 may be different from LPR 2010.

If everyone in the world consumed like Denmark then the Ecological Footprint would be 4.65 Planets.

Comparing LPR 2010 and LPR 2012

	LPR 2010	LPR 2012
Ecological Footprint per person	8.26	8.25
Ecological Footprint ranking	3	4
Biocapacity per person	4.85	4.81
Biocapacity ranking	21	21

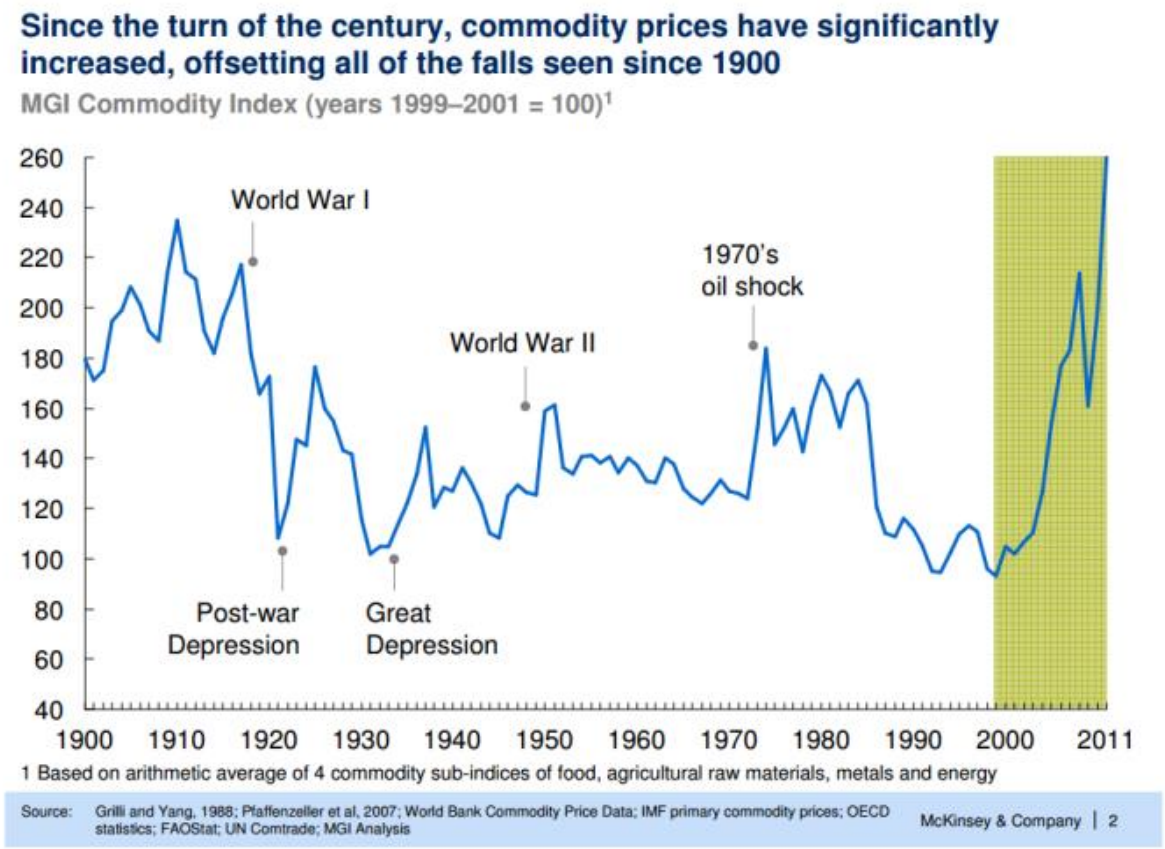
Trends in the Ecological Footprint and biocapacity in 2010 and 2012



Historical growth rates

Decade	Growth in high income countries	Growth in Denmark
60ies	5,4	4,7
70ies	3,8	2,3
80ies	3,1	2,1
90ies	2,5	2,6
00ies	1,4	0,6
10ies	?	?

Prices


Since the turn of the century, commodity prices have significantly increased, offsetting all of the falls seen since 1900
MGI Commodity Index (years 1999–2001 = 100)[1]
260
240
220
200
180
160
140
120
100
80
60
40
World War I
1970's oil shock
World War II
Post-war Depression
Great Depression
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2011
1 Based on arithmetic average of 4 commodity sub-indices of food, agricultural raw materials, metals and energy
Source: Grilli and Yang, 1988; Pfaffenzeller et al, 2007; World Bank Commodity Price Data; IMF primary commodity prices; OECD statistics; FAOStat; UN Comtrade; MGI Analysis
McKinsey & Company | 2

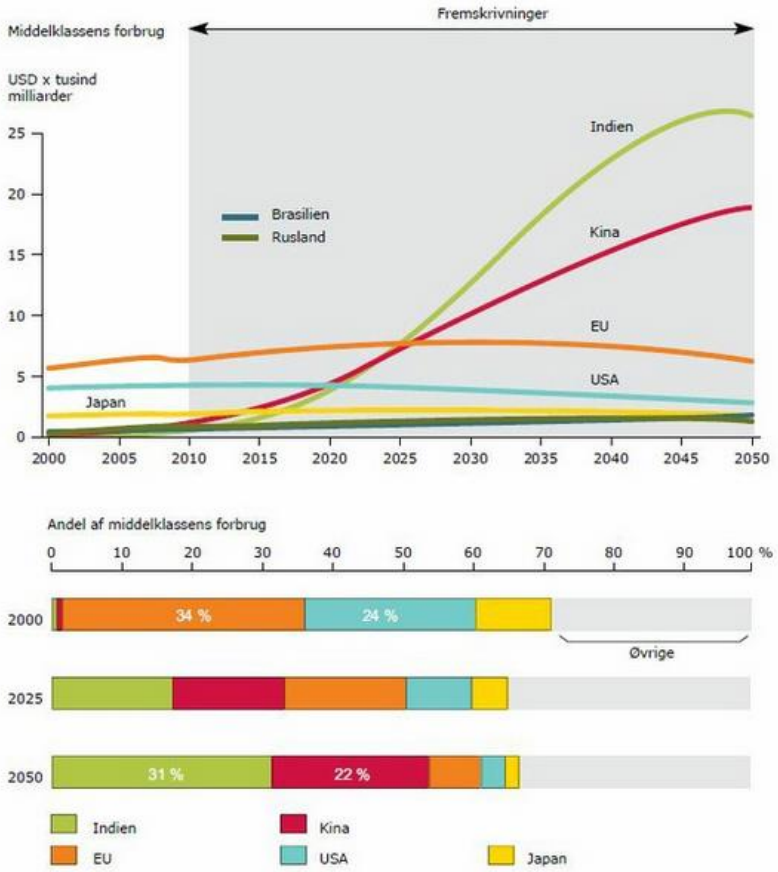
Demography

Global population will increase from 7 to 10 billion people in 2050

McKinsey expects the global middle classes to expand from about 2 billion people today to 4.8 billion people in less than 20 years

The UN's High-level Panel on Global Sustainability expects that the world in 2030 will need 50 % more food, 45 % more energy and 30 % more water.

Global consumption patterns



I denne undersøgelse er middelklassen defineret ved forbrugets størrelse: Det er den gruppe husholdninger, der bruger mellem 10 og 100 USD dagligt (i købekraftspariteter).

Kilde: Kharas, H., 2010, *The emerging middle class in developing countries.*

EEA, miljøsignaler 2011

The mega trend

A world of limited resources

- The finite resources are being consumed hastily.
- The global population growth, notably in the middle classes, drives this development.
- Denmark must reduce GHG emissions from 18 to 2 t/person/year
- Resource efficiency growth has been 0.7 % annually in the last 20 years. This must increase with a factor 6-10 if technology alone is to solve the problems.
- **Land use and consumption patterns must change.**

So what does all this mean for urban planners??

1. **We must mitigate the changing climate**
   - **Carbon capture**

2. **We must adapt to the changing climate**
   - **Urban trees to protect us from heat and droughts**
   - **Green resilient solutions to future cloudbursts**

So what does all this mean for urban planners??

3. **We must encourage sustainable consumption:**

   - **Dining**
   - **Wining**
   - **Cultural experiences**
   - **Purchase quality food and goods**

So what does all this mean for urban planners??

Ultimately, we must create cities that are worthwhile living in

- ***So people stop travelling all the time***
- ***That people in the emerging economies will copy***

- ***Good luck☺***