

Implications of Offshoring Carbon Emissions for Climate Policy

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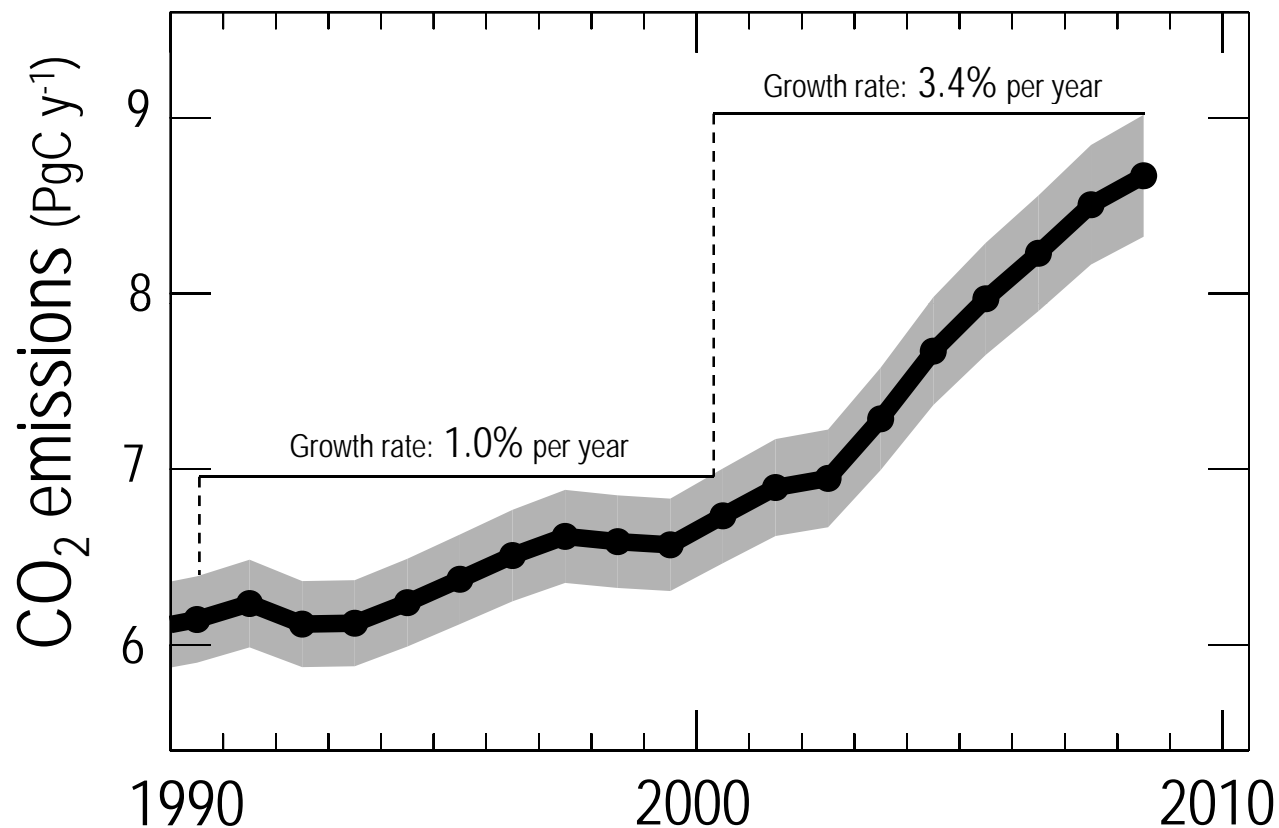
<http://www.harc.edu>

<http://www.texasclimate.org>

<http://www.texasclimatenews.org>

Fossil Fuel Emissions and Cement Production

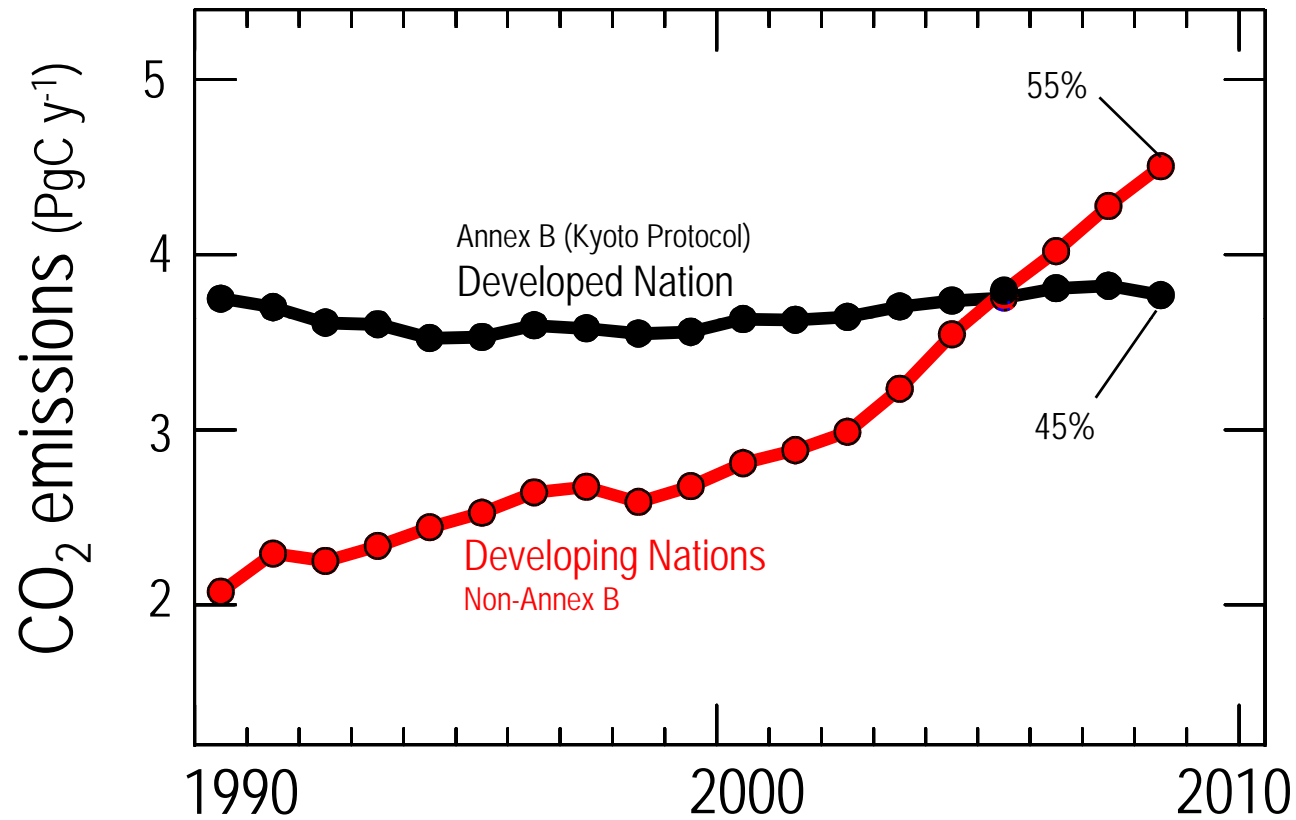
[1 Pg = 1 Petagram = 1 Billion metric tonnes = 1 Gigatonne = $1 \times 10^{15} \text{g}$]



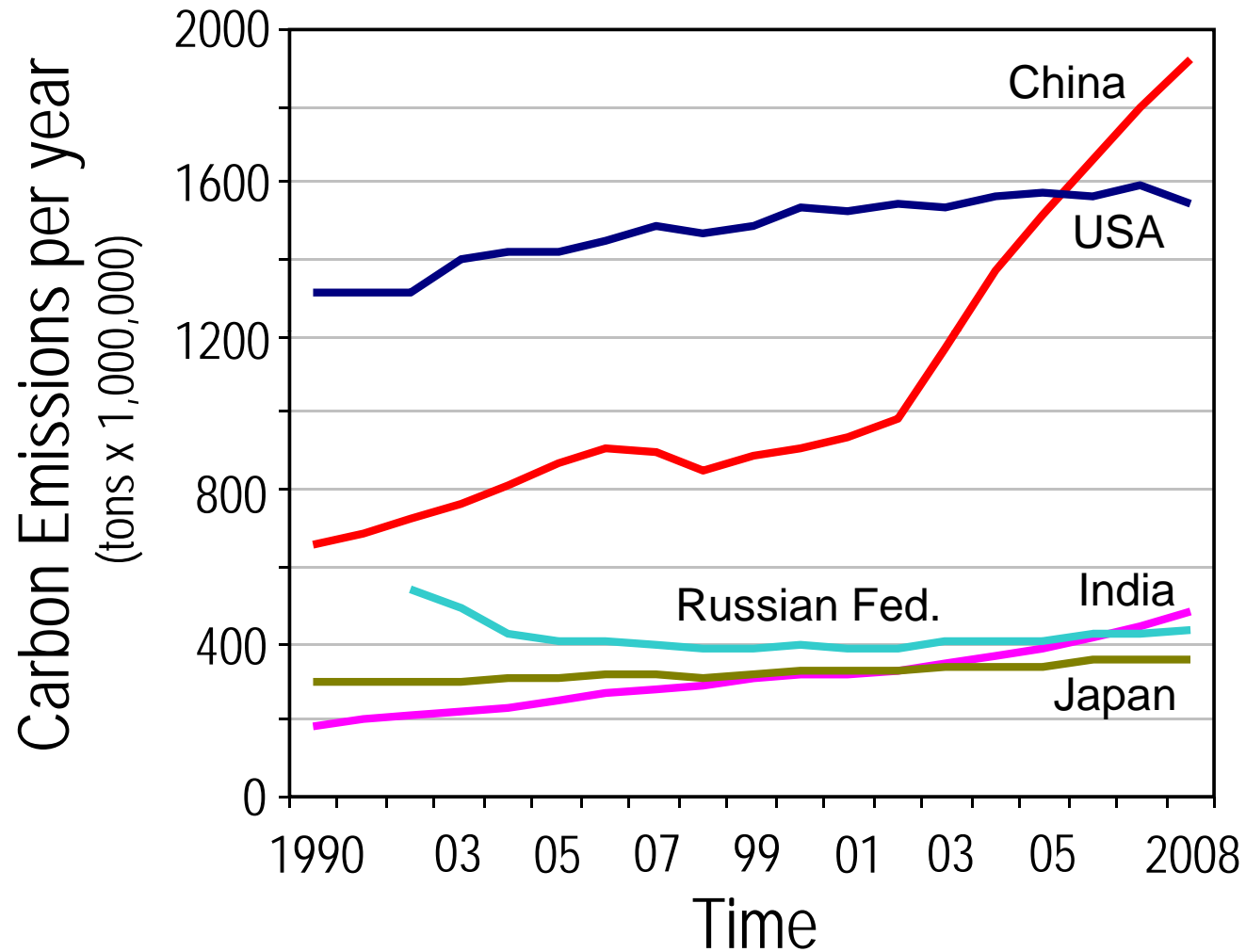
2008:
Emissions: 8.7 PgC
Growth rate: 2.0%
1990 levels: +41%

2000-2008
Growth rate: 3.4%

CO₂ Fossil Fuel Emissions

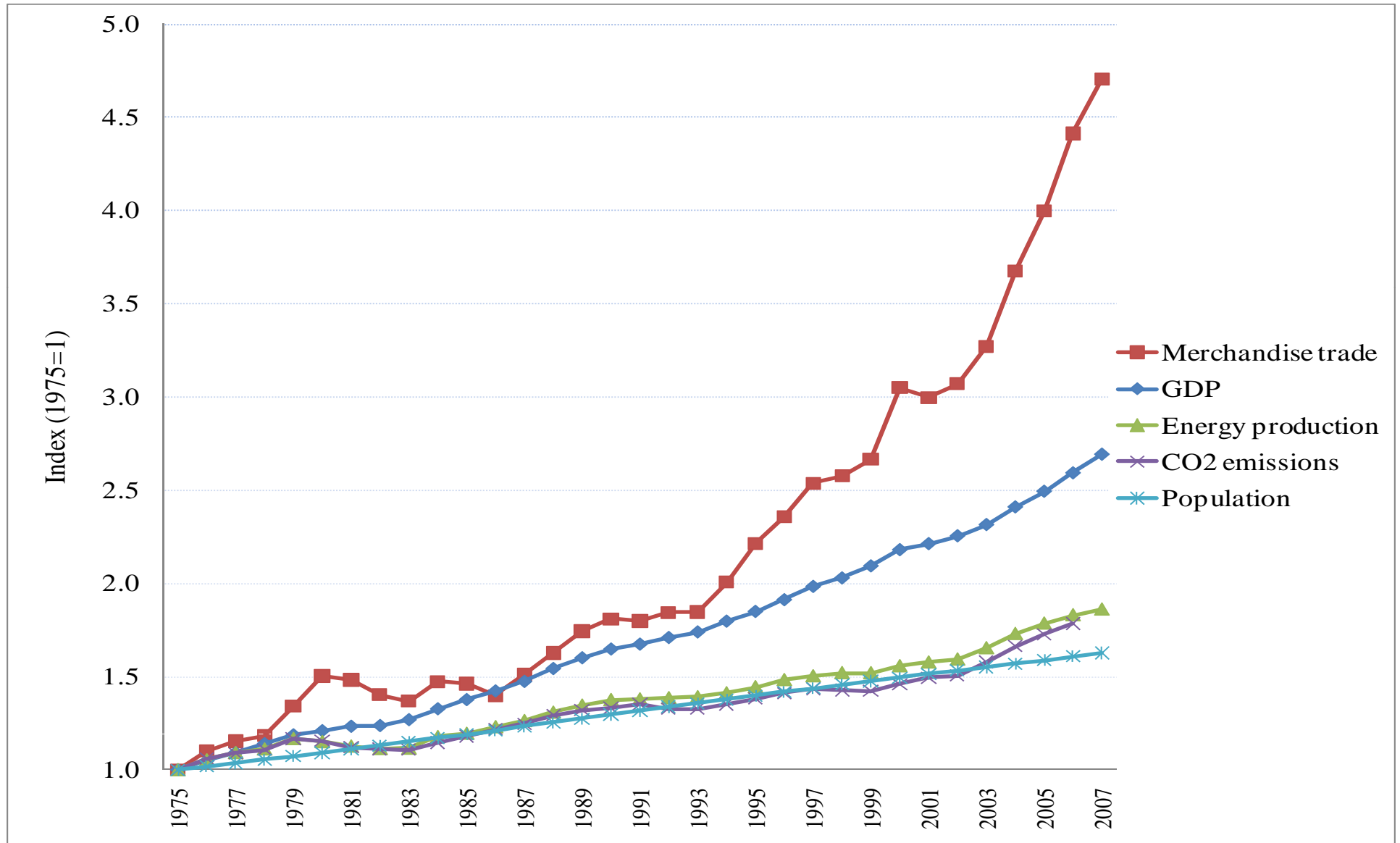


Fossil Fuel Emissions: Top Emitters



Growth of global trade in goods, gross domestic product (GDP), energy use, CO2 emissions, and global population, 1975-2007.

Source: Data obtained from World Development Indicators (2010).

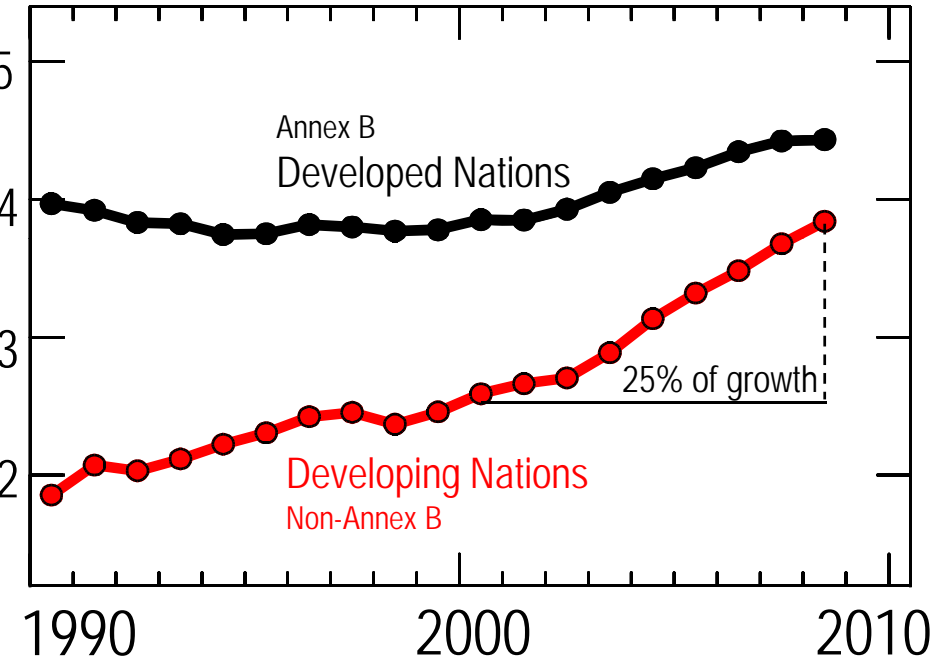
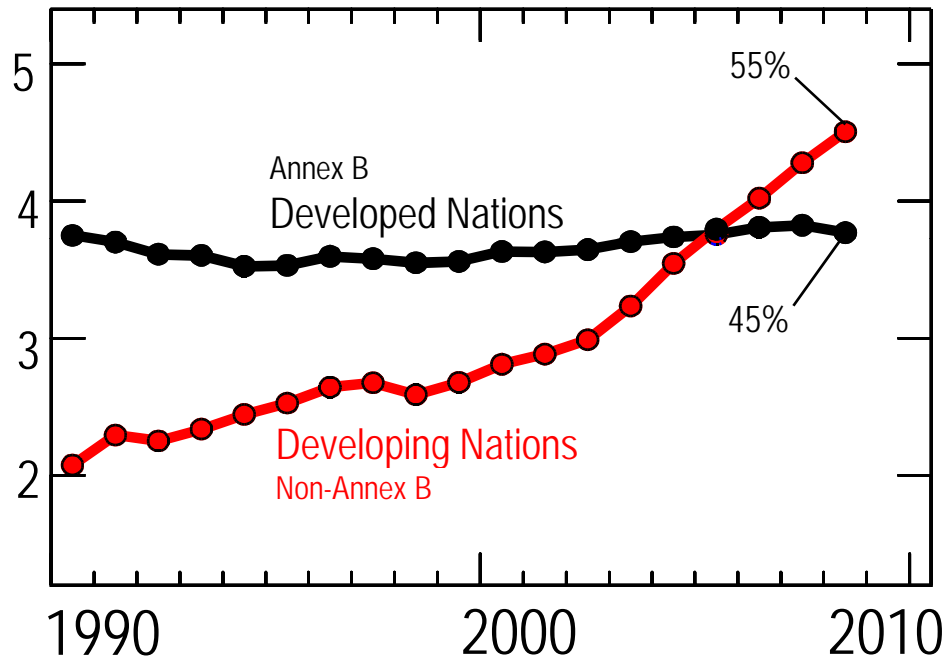


Production vs. Consumption

- Production based (territorial) accounting
 - Advantage: data availability
 - UNFCCC (e.g. Kyoto Protocol)
- Consumption based accounting
 - Modelling required
 - Consumer responsibility and social justice
 - Consistency of climate policies

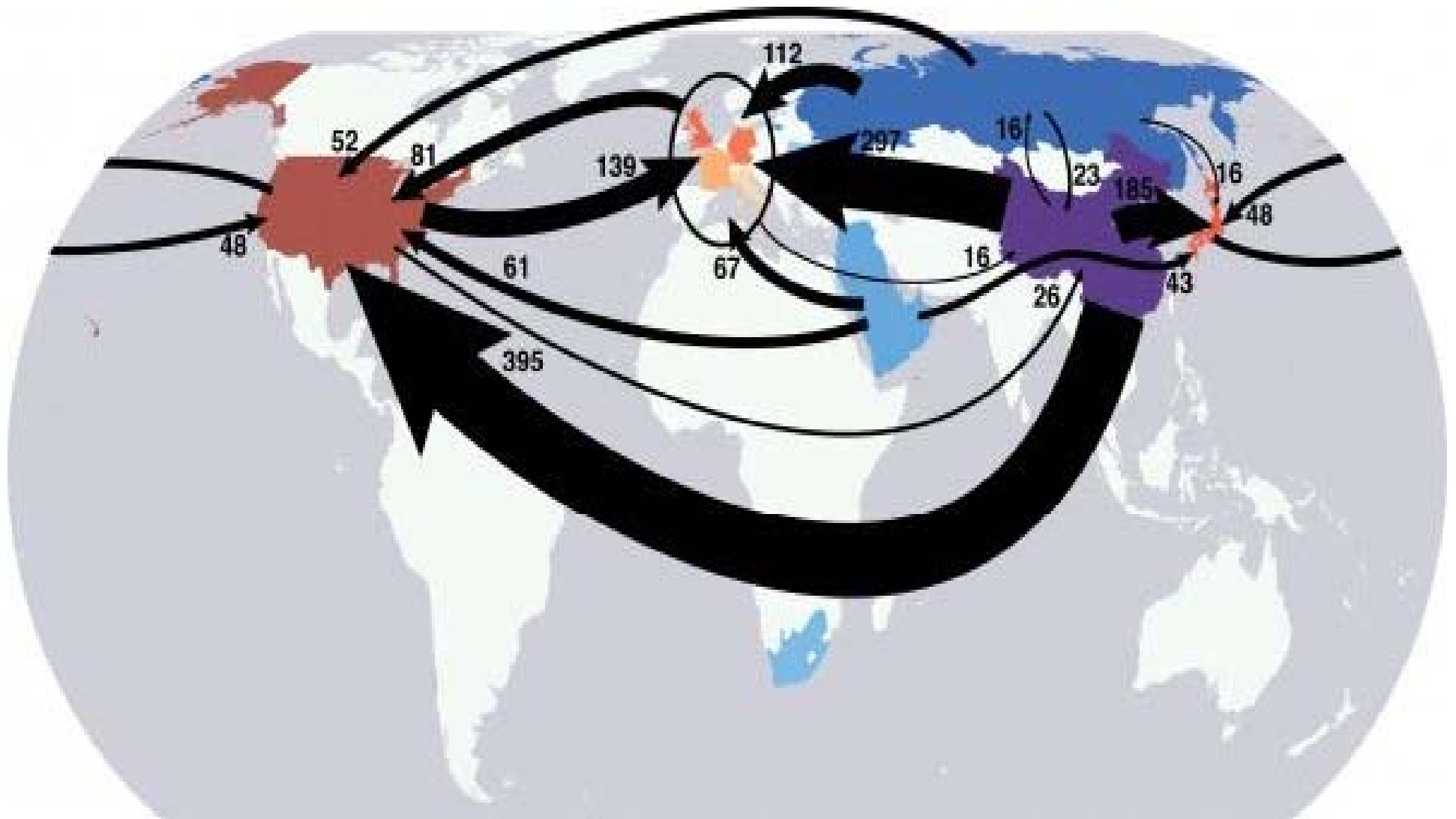
Transport of Embodied Emissions

CO₂ emissions (PgC y⁻¹)



Movements of embodied carbon in trade from dominate net exporting countries (purple and blue) to dominant net importing countries (red) in 2004.

Source: Davis and Calderia, 2010. (Mt CO₂-million metric tons per year)



Reasons for the increasing importance of embodied carbon

- Relocation of industries to countries with less strict environmental regulations
- Satisfaction of increased demand by countries with lower production costs

Conclusions

1. Embodied CO₂ in international trade is increasing.
2. Global agreements on emission reductions will not be acceptable without an agreement on **shared responsibility between producers and consumers.**
3. Consumption-based accounting of carbon, nitrogen, water and other environmental variables will increasingly inform the design of policies related to climate and sustainability.

So what else can we do?

(Change our way of life?!?)

