



Green Economies Around the World ?

Implications of Resource Use for
the Environment and Development

Stefan Giljum
Christine Polzin
Stephan Lutter

Monika Dittrich

SUSTAINABLE EUROPE
RESEARCH INSTITUTE



Independent Scientist

World Resources Forum, September 19-21 2011, Davos

Aims of our project “Green Economies around the World?”

1. Investigate patterns of material extraction, trade, consumption and resource productivity in different world regions and countries;
2. Analyze connections between material use and indicators of economic and social development;
3. Illustrate links between material use and selected major environmental problems, such as carbon emissions, land use change and water use.

Financial supporters (so far)





Underlying data bases

Material extraction data base

based on various int. statistics
available at
www.materialflows.net

Physical trade data base

mainly based on UN Comtrade
one aim of this project is to make it
publically available

Previous studies

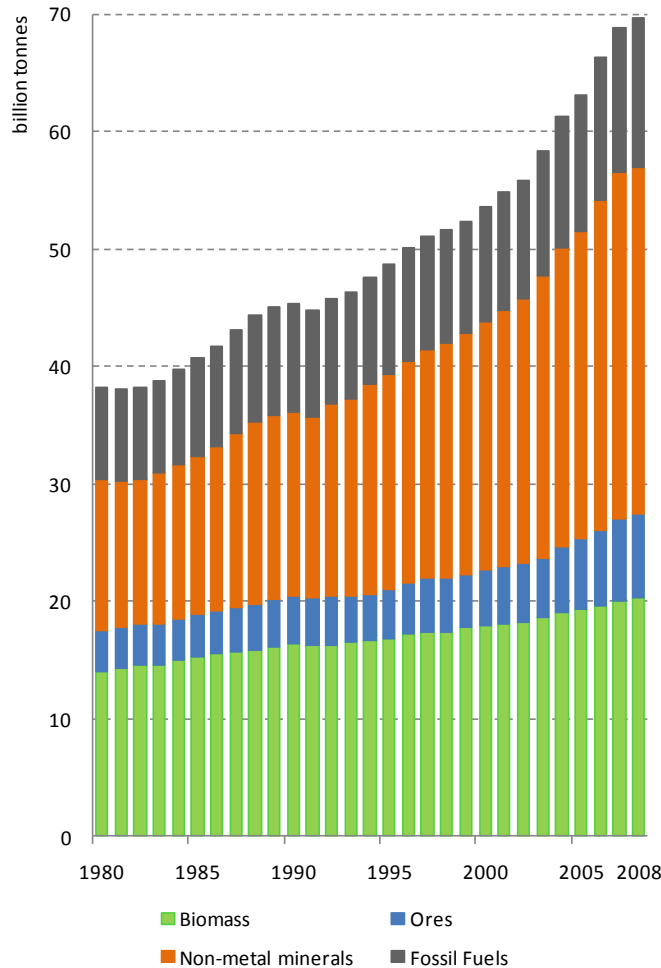
Dittrich 2010: Physical Trade Balances. Is the North shifting its environmental burden to the South?

UNIDO/ Giljum, Dittrich, Polzin, Lutter 2010: Resource Use and Resource Productivity in Asia.

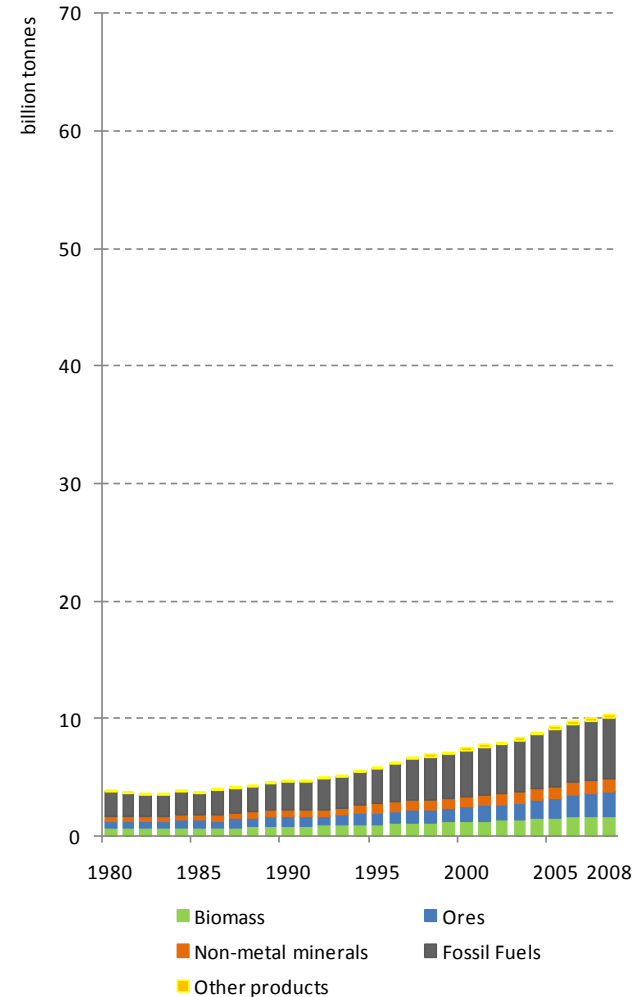
UNIDO/ Dittrich, Giljum, Polzin, Lutter 2011: Resource Use and Resource Productivity in Emerging Economies.

Global material extraction and physical trade are rapidly increasing

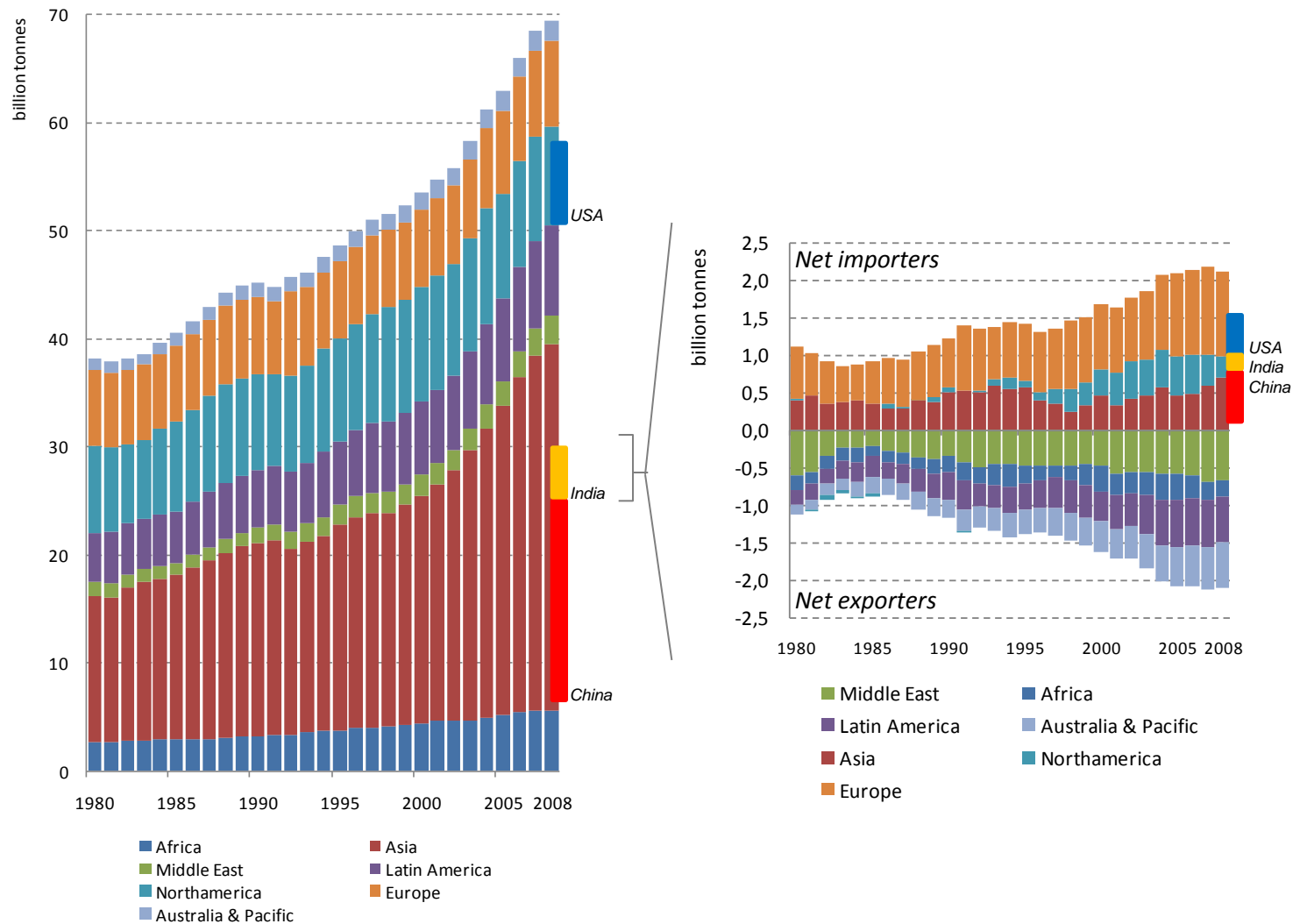
Used material extraction, 1980-2008



Physical trade, 1980-2008

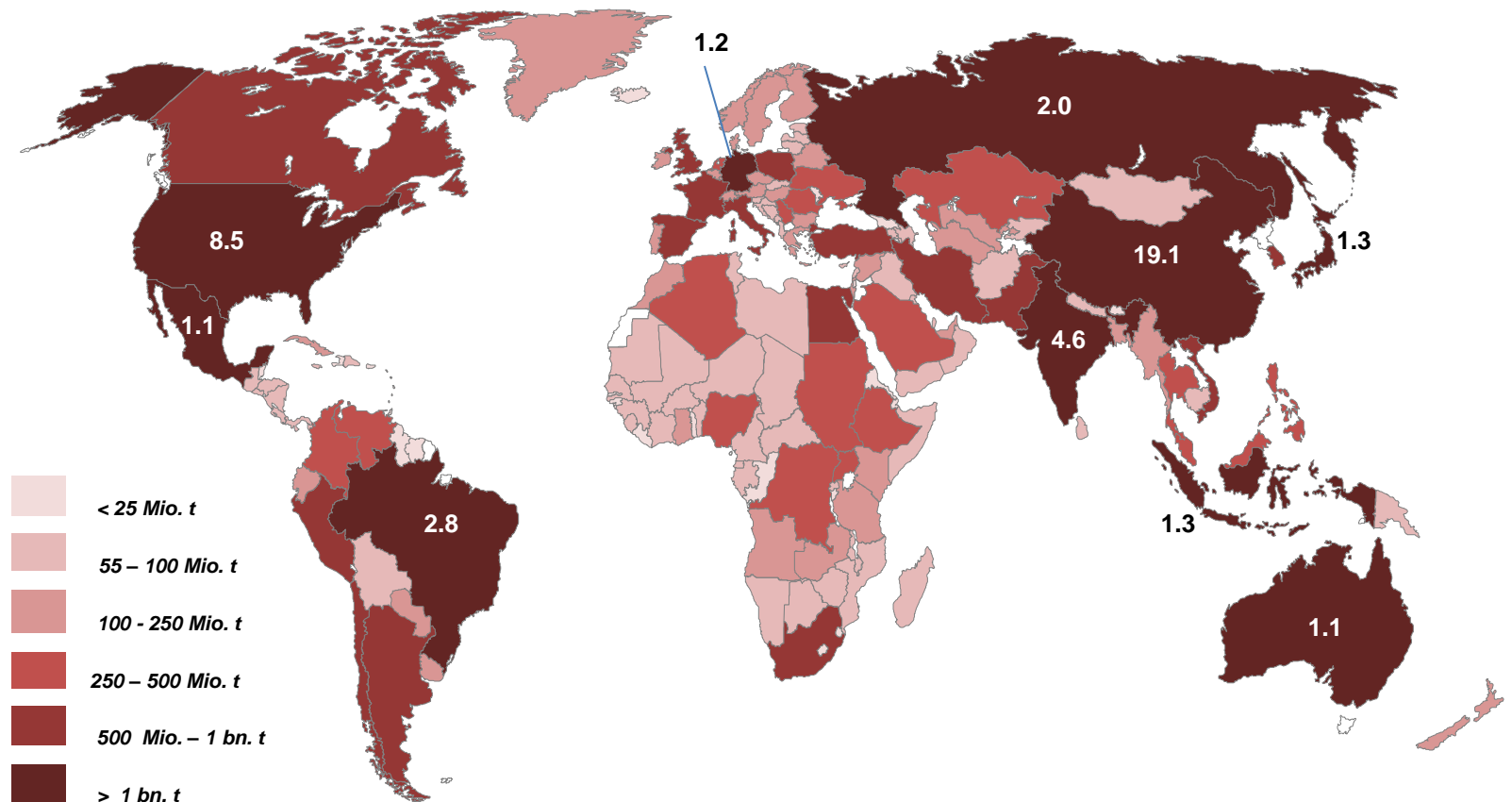


Asia dominates extraction, while Europe is the biggest net-importer of resources



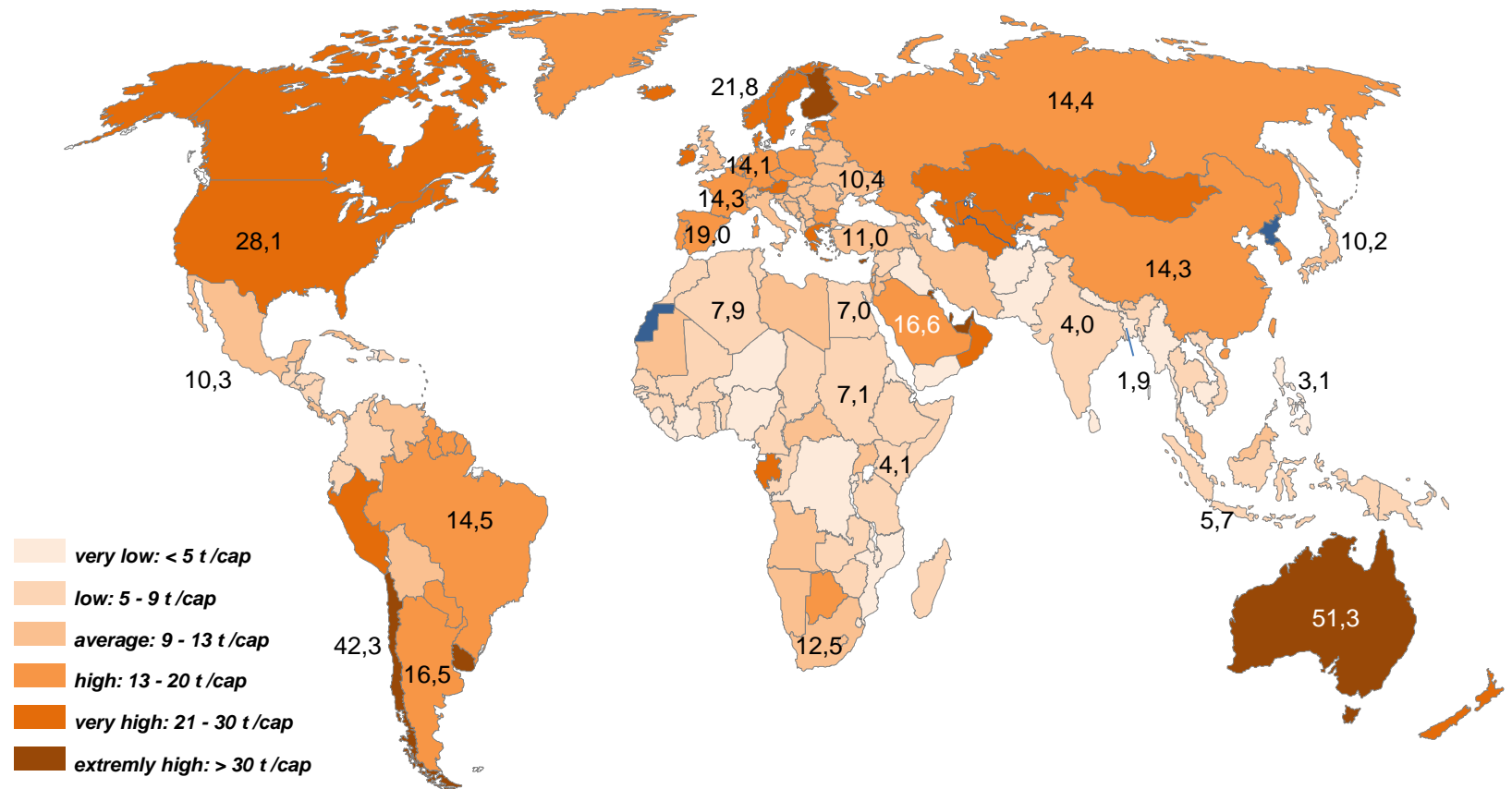
China is by far the biggest resource consumer in absolute terms

Domestic Material Consumption (DMC), absolute numbers, 2008



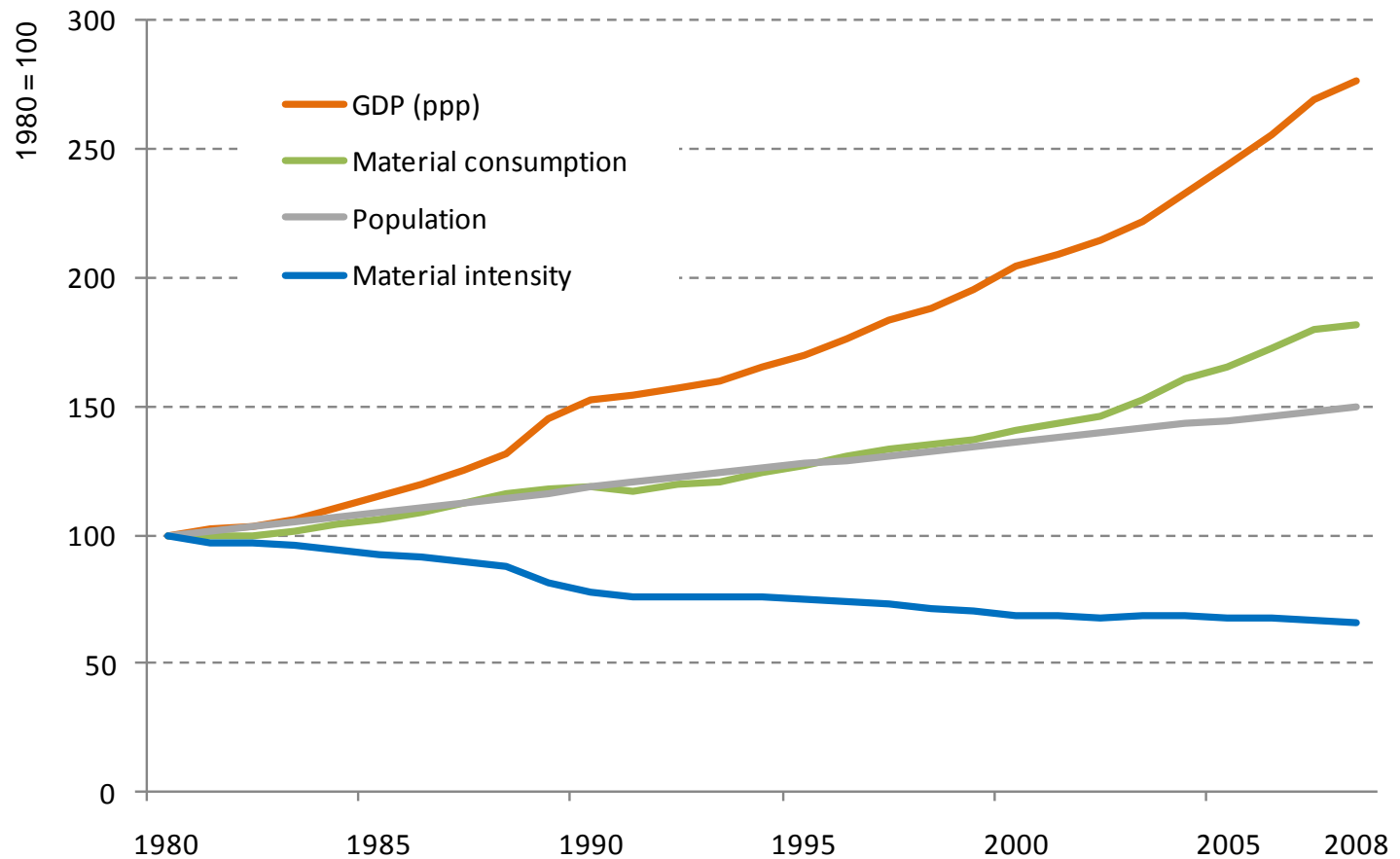
Material consumption per capita ranges from around 2 tonnes to more than 50 tonnes

Domestic Material Consumption (DMC) per capita, 2008



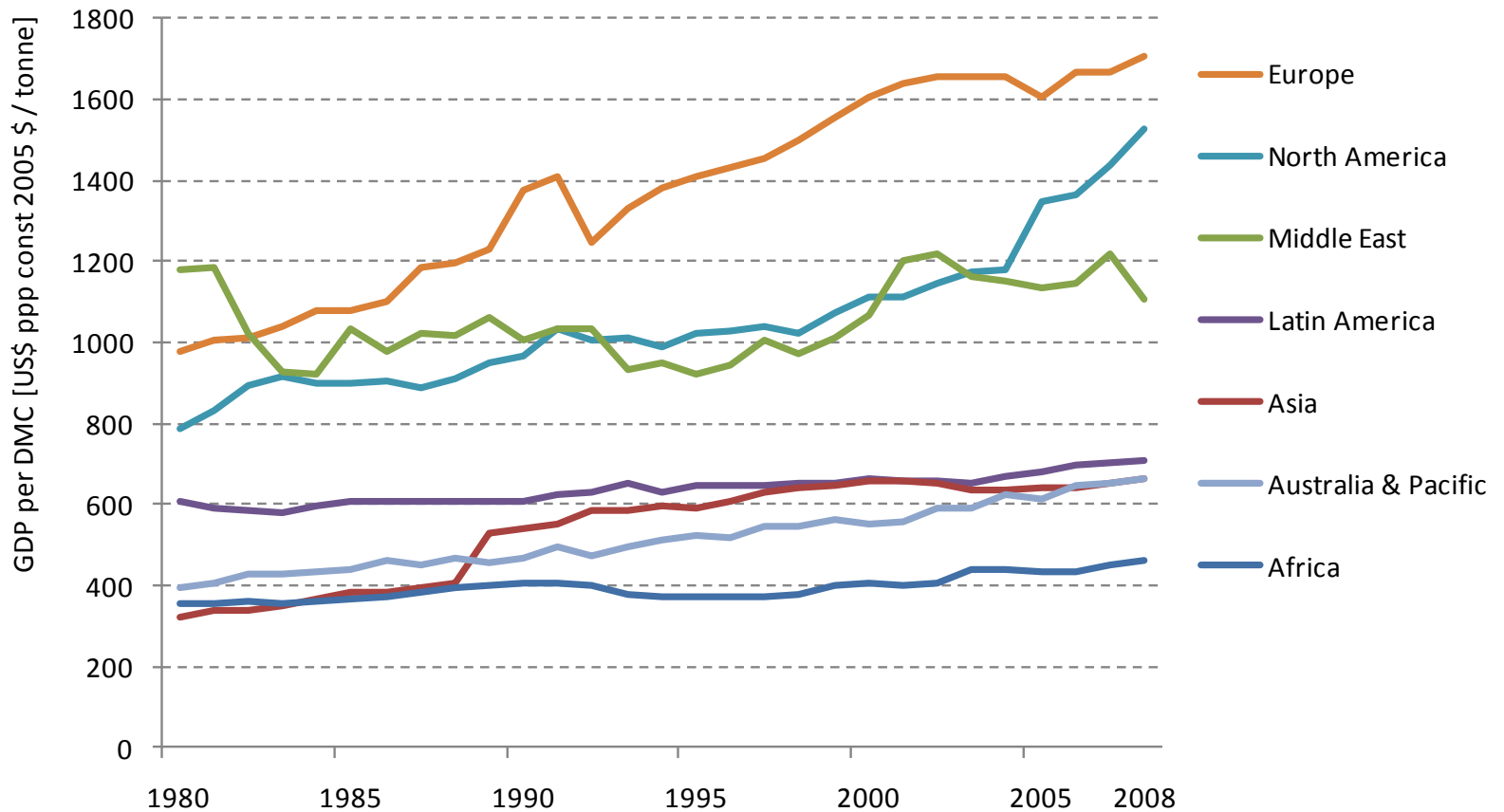
Relative (but no absolute!) de-coupling on the global level

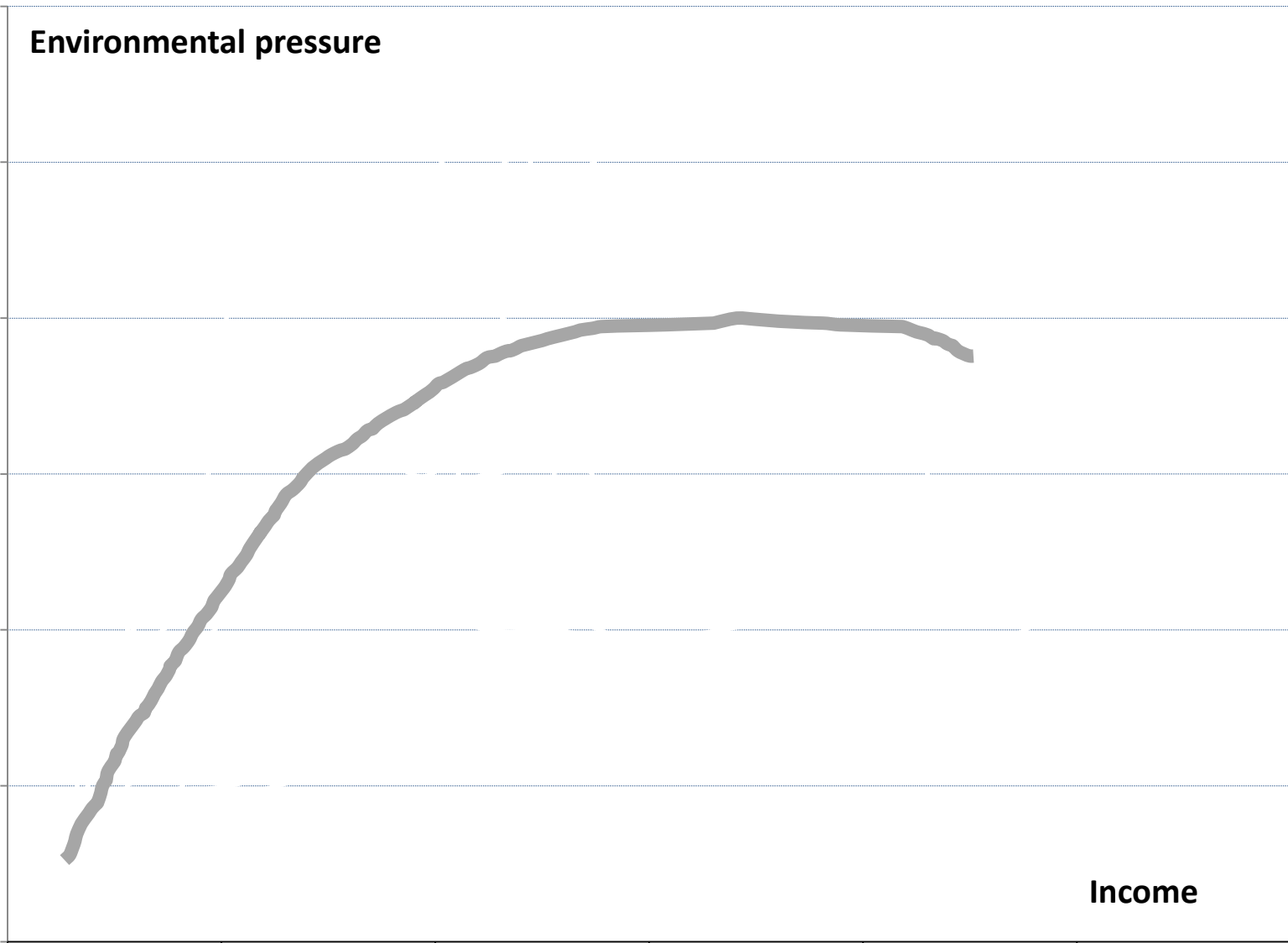
DMC, GDP (ppp), Population, Material intensity (DMC/GDP), 1980-2008



Resource productivity differs by a factor 4, but outsourcing plays an important role!

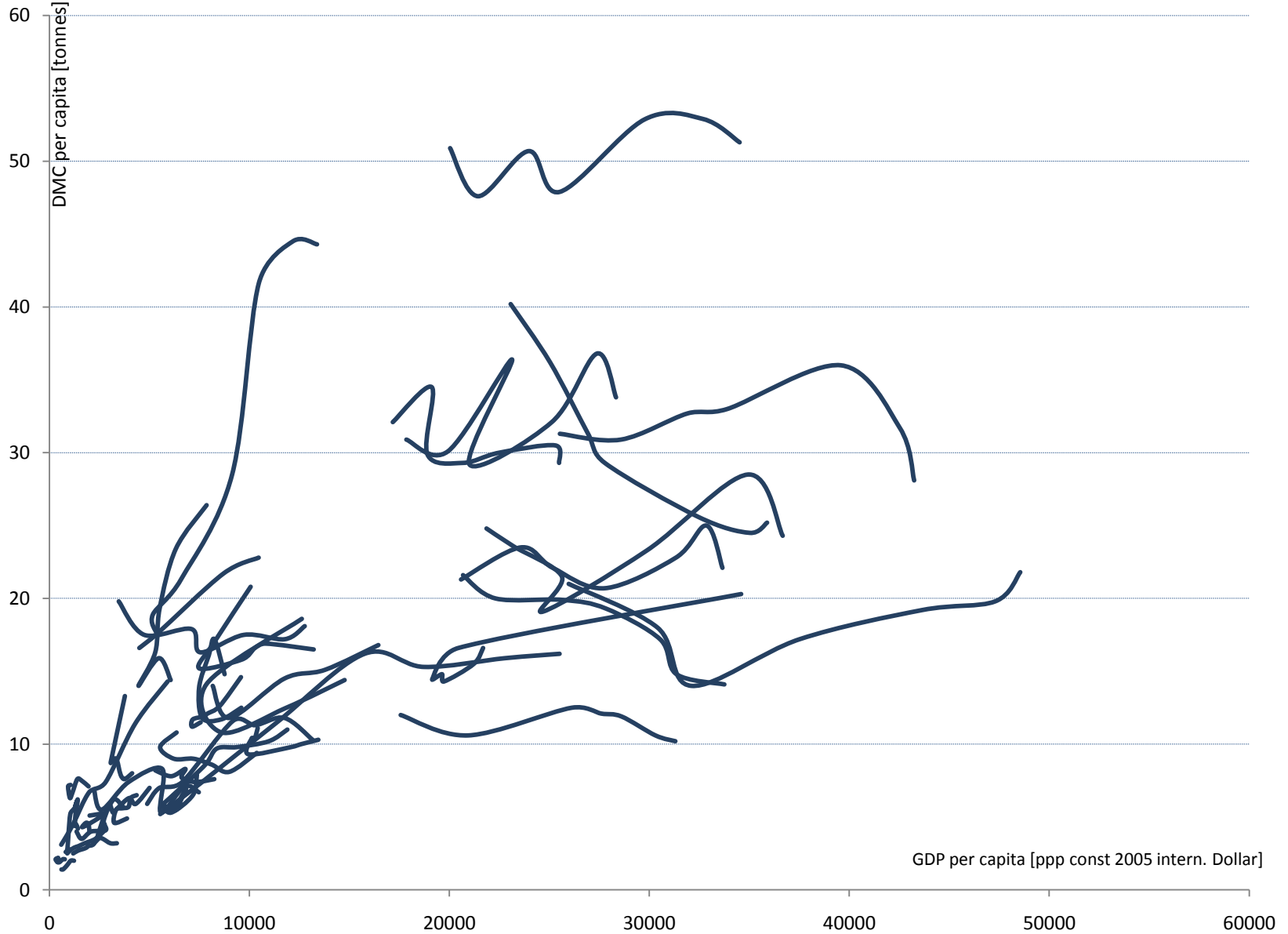
GDP (PPP) per DMC, 1980-2008





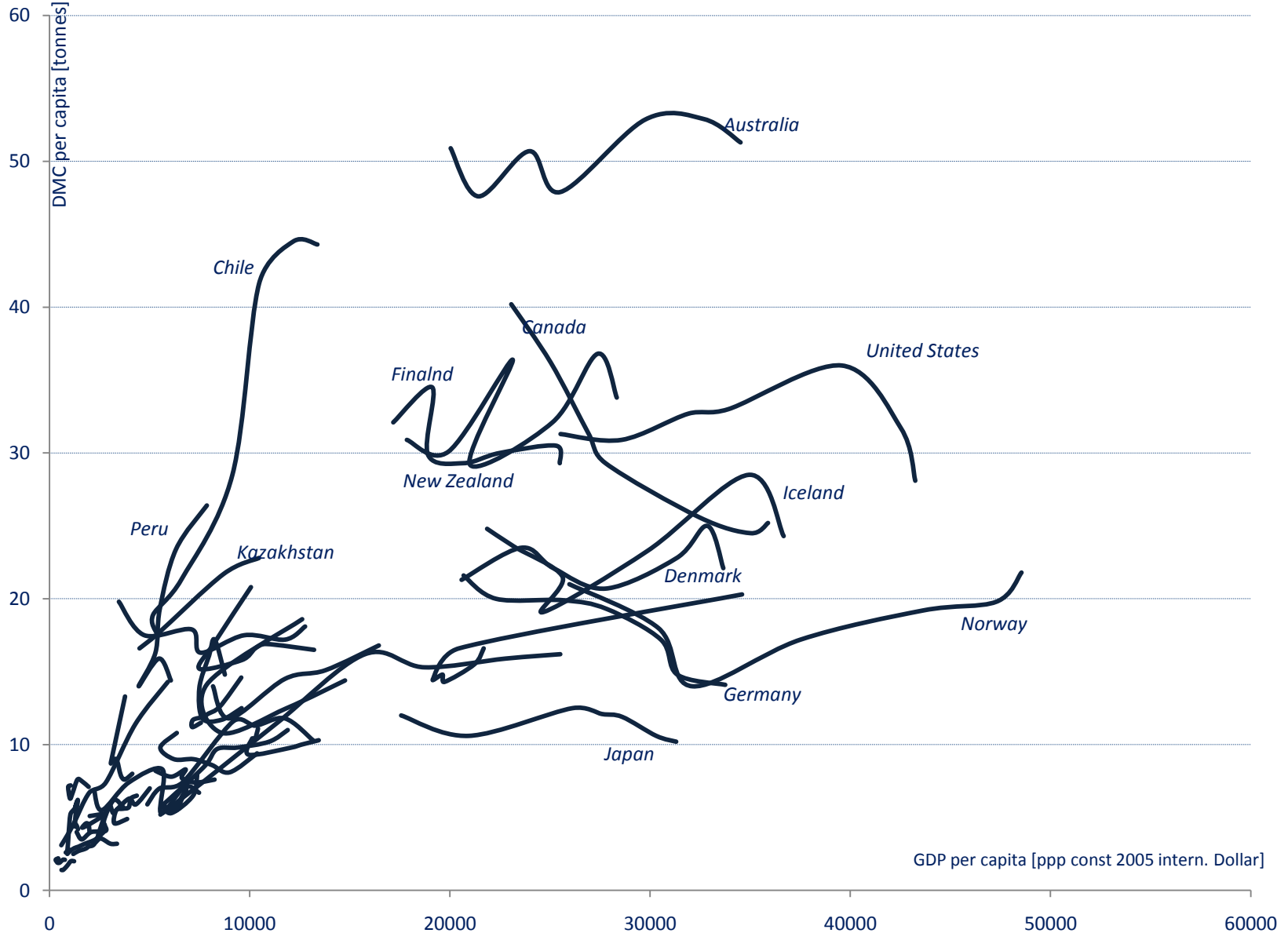
Development dynamic of countries is very different

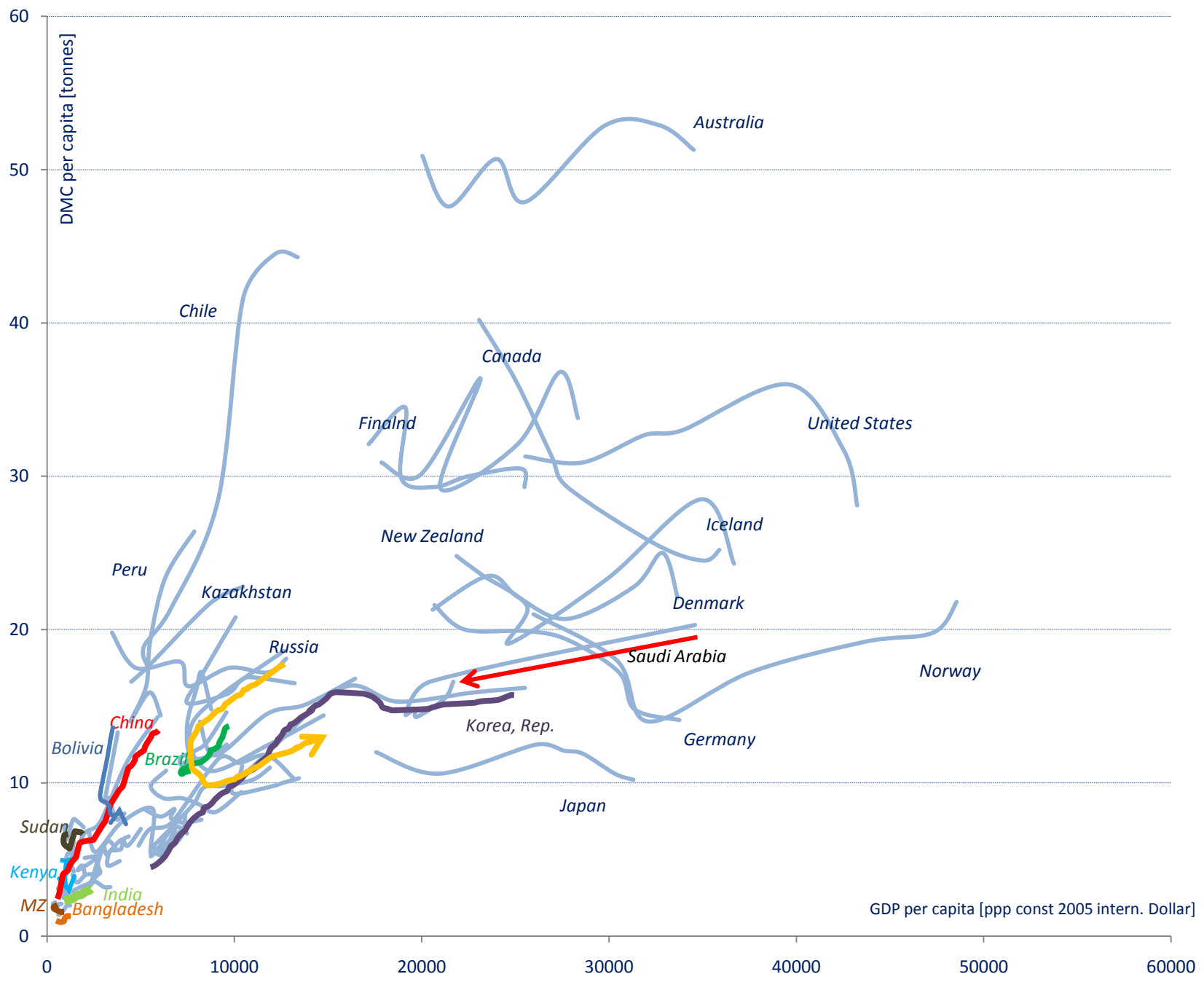
Resource consumption and income of selected countries, 1980 - 2008



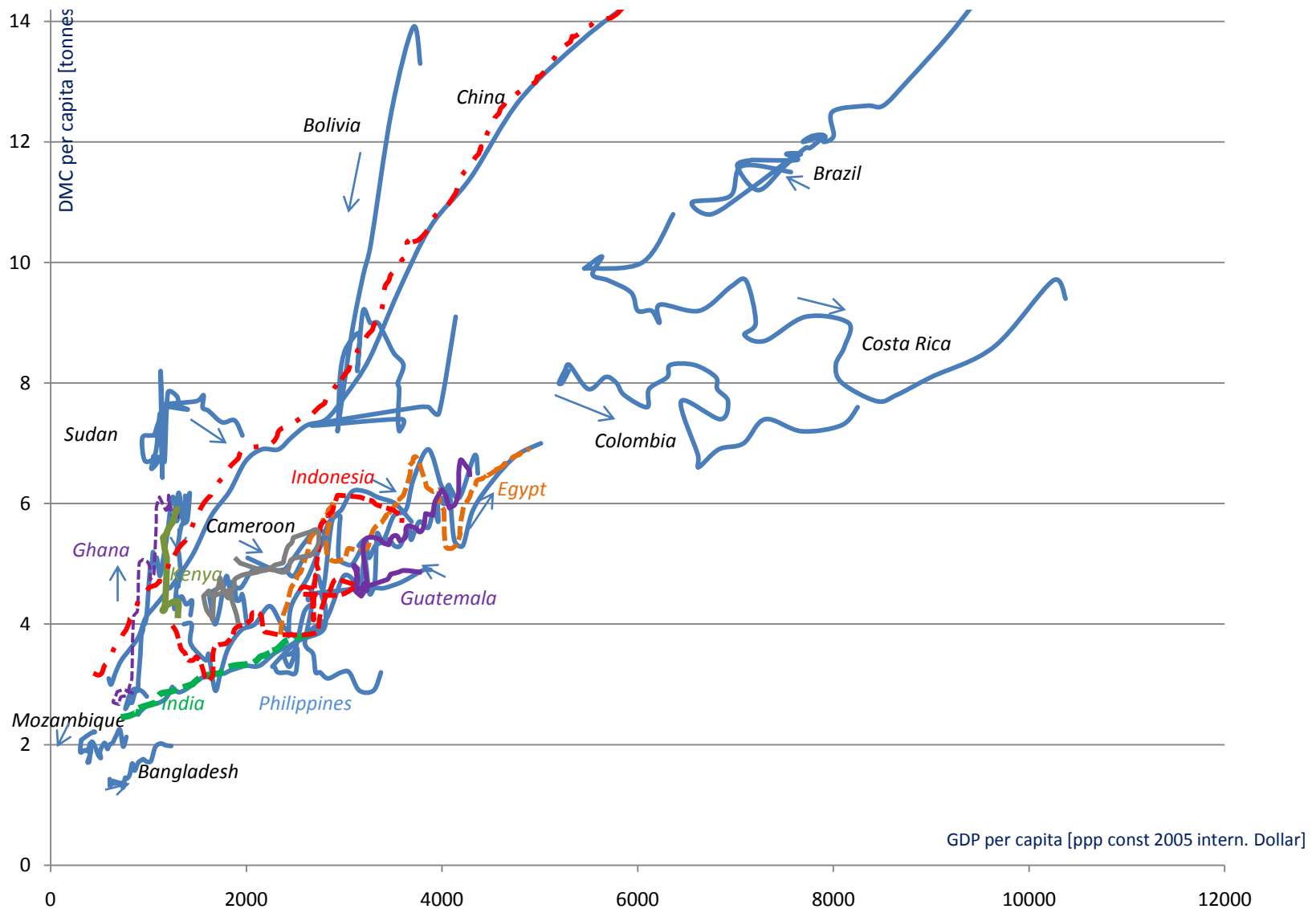
Development dynamic of countries is very different

Resource consumption and income of selected countries, 1980 - 2008



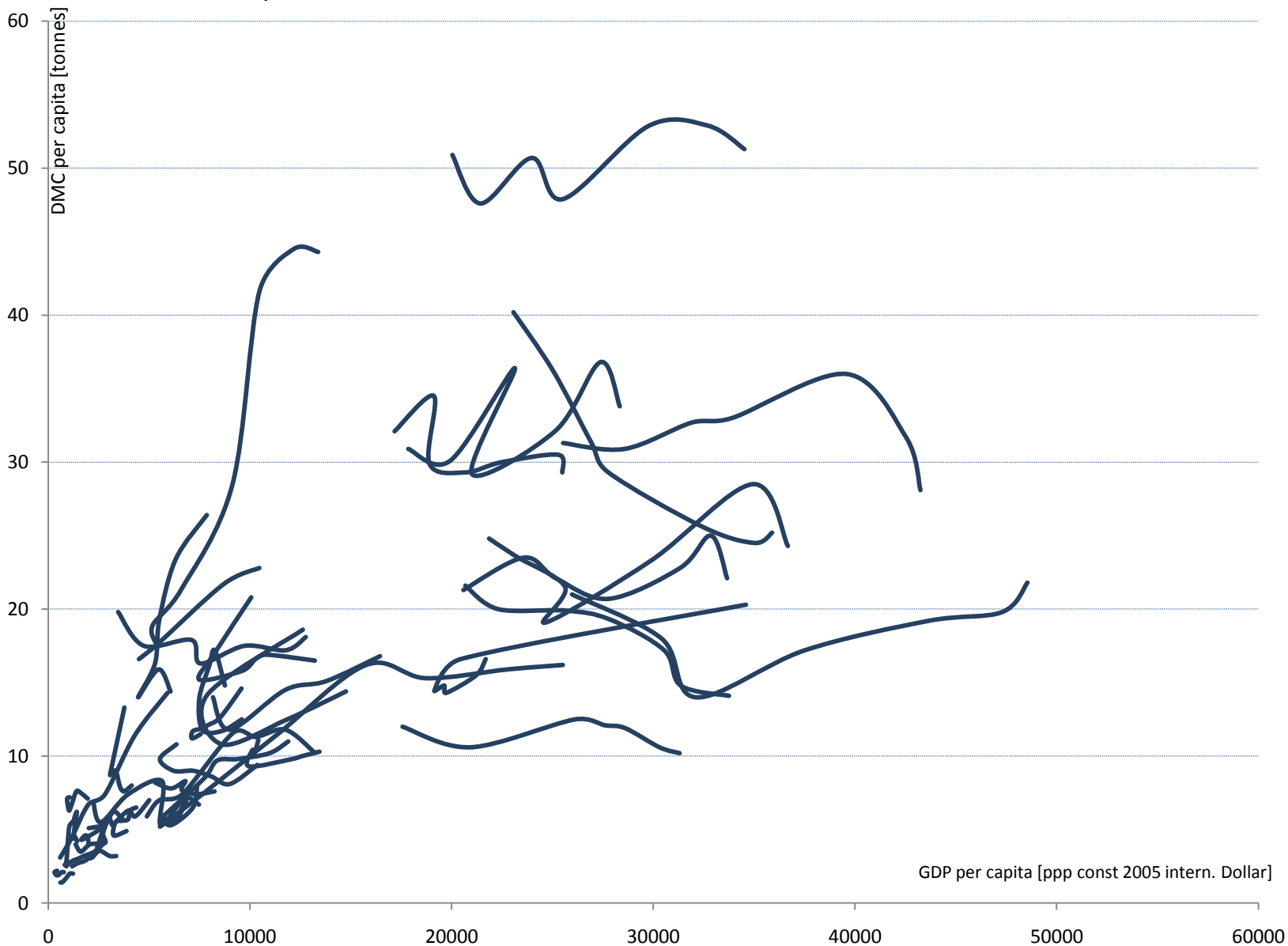


Development dynamic of developing countries doesn't follow EKC-hyporthesis



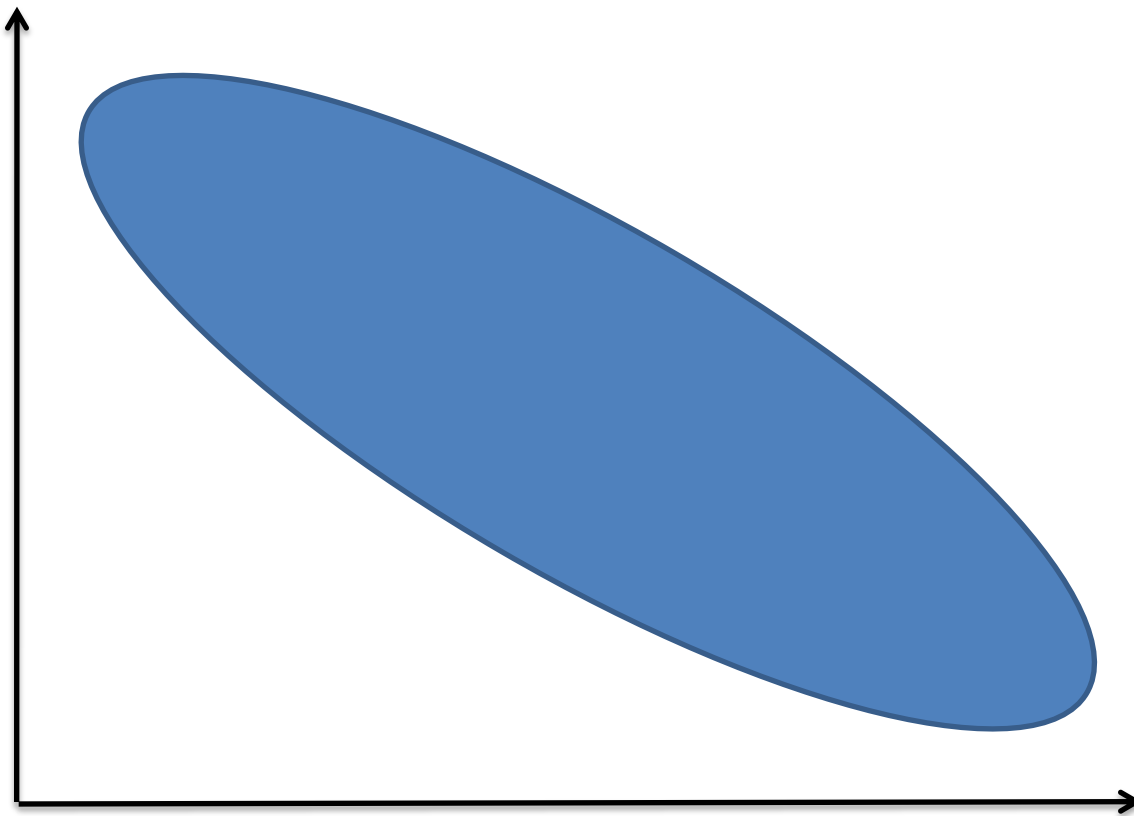
Development dynamic of countries is very different

Resource consumption and income of selected countries, 1980 - 2008



Material consumption vs. environmental impact: theoretical distribution

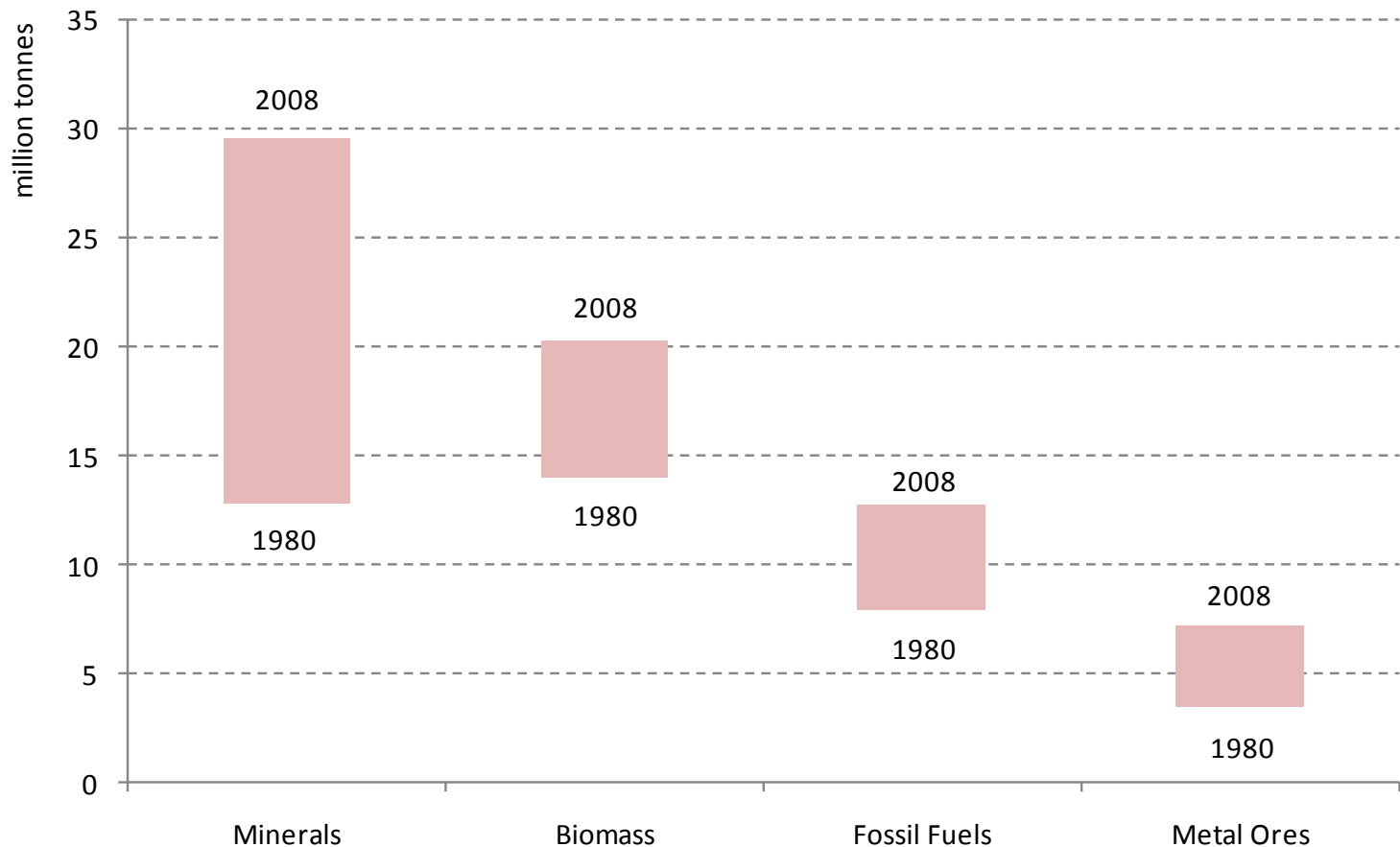
Material consumption (tonnes)



Environmental impact per tonne

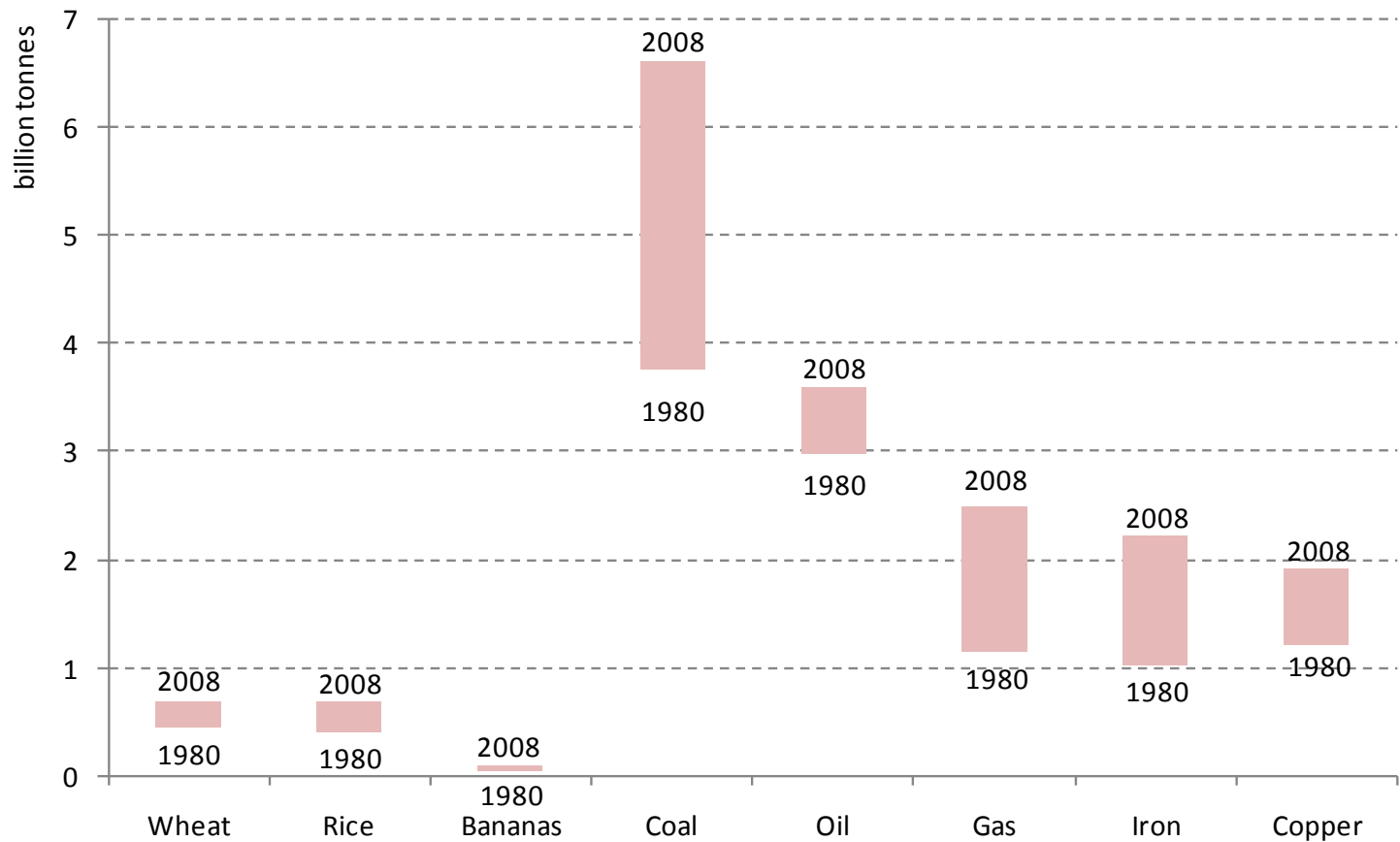
Material consumption vs. environmental impact: actual distribution (aggregated)

Global material consumption, 1980-2008



Material consumption vs. environmental impact: actual distribution (disaggregated)

Global material consumption, 1980-2008





Main conclusions

- **Relative de-coupling, but no absolute reduction**; extraction and consumption grow faster than improvements in resource productivity → our report will present new facts on key indicators for all countries world-wide
- Countries across the globe follow **very different development paths**; no Environmental Kuznets Curve (EKC) can be observed → we will investigate the implications for economic development and poverty reduction
- Growth in material consumption in all categories; **serious implications for the global environment** → we will illustrate the links between specific materials and the different environmental problems



Thank you for your attention!

Study published in March 2012

Contact:

Stefan Giljum

Sustainable Europe Research Institute

E-Mail: stefan.giljum@seri.at

Monika Dittrich

Independent Scientist

E-Mail: monika.dittrich@gmx.net

