

Results from the UN IRP Global Material Flows Database



Dr. Stephan Lutter

Vienna University of Economics and Business (WU)

Workshop on Material Flow Accounts and Waste
Statistics for SDG indicators

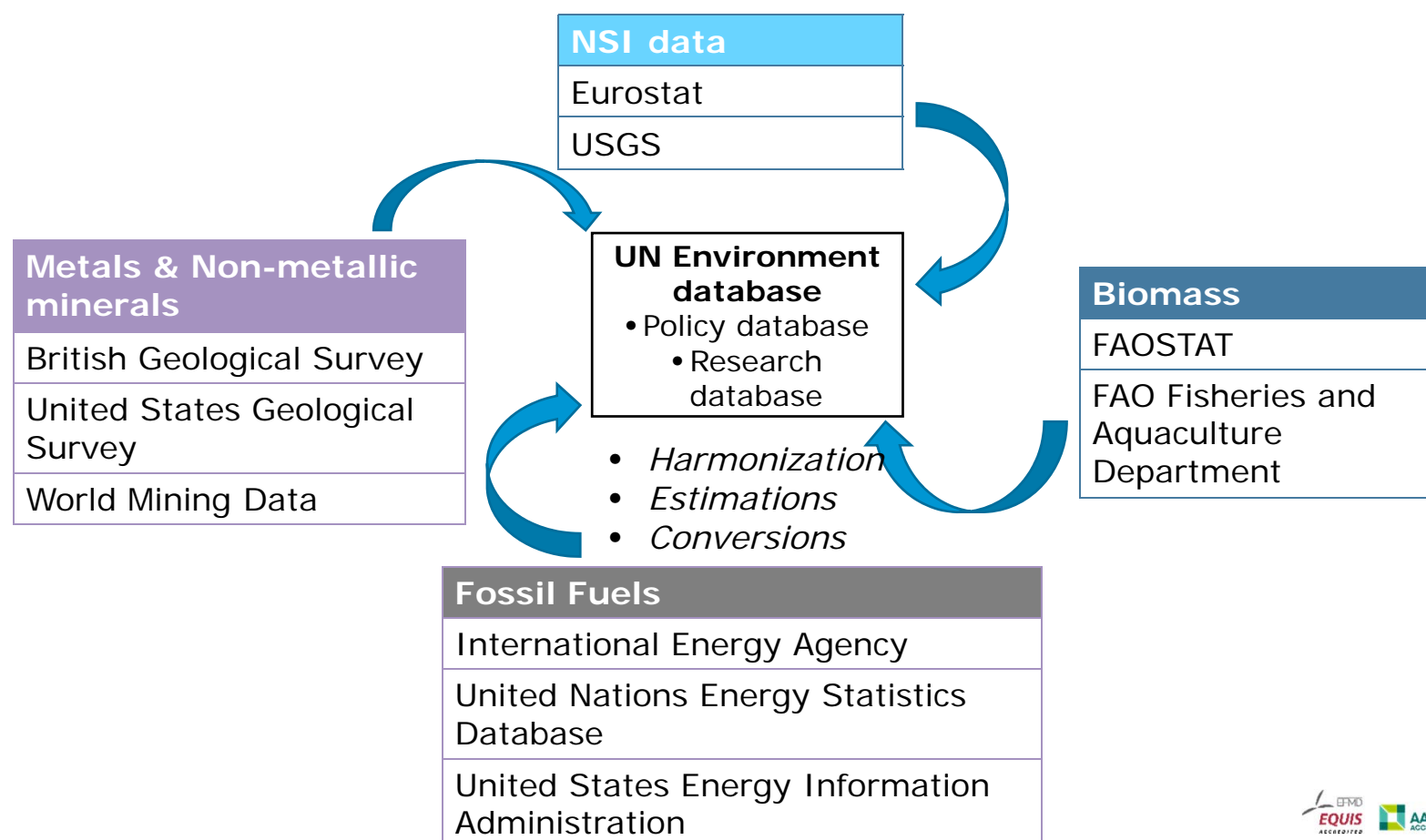
JULY 16-18, 2018



UN Environment Global Raw Material Dataset Version 2017

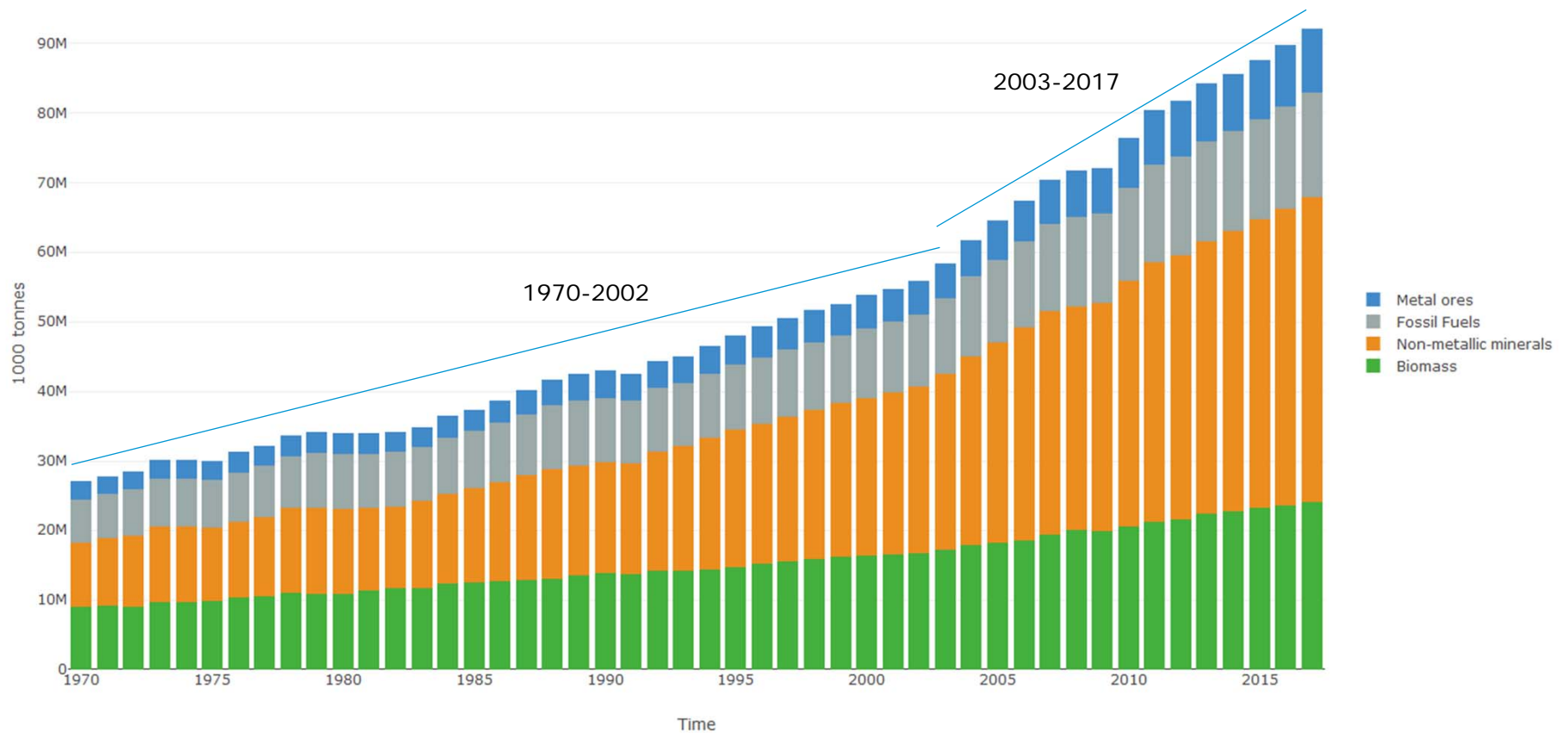
- Aim: to provide one harmonized global reference dataset on material extraction and trade
- For use by wide range of stakeholders, e.g. policy makers, civil society organizations, scientists
- Coverage:
 - 191 countries
 - 1970-2017
 - Policy database: 4/13 material categories
 - Research database: 64 material categories
 - Biomass, metal ores, minerals, fossil fuels (reported in tonnes)
- Authors: CSIRO & WU Vienna

UN Environment Global Raw Material Dataset Version 2017



Global resource extraction

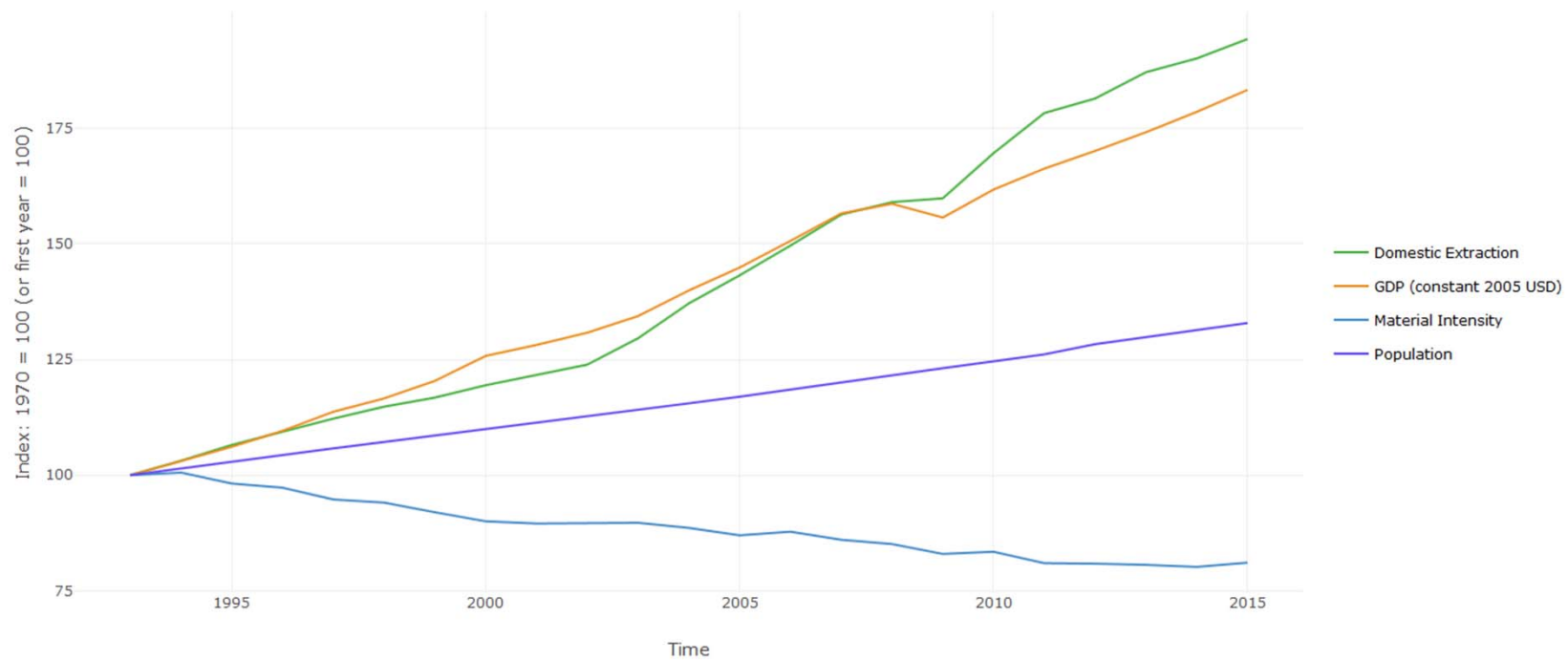
Domestic Extraction of World in 1970-2017, (by material group)



Quelle: UN Environment, 2017

Global de/re-coupling

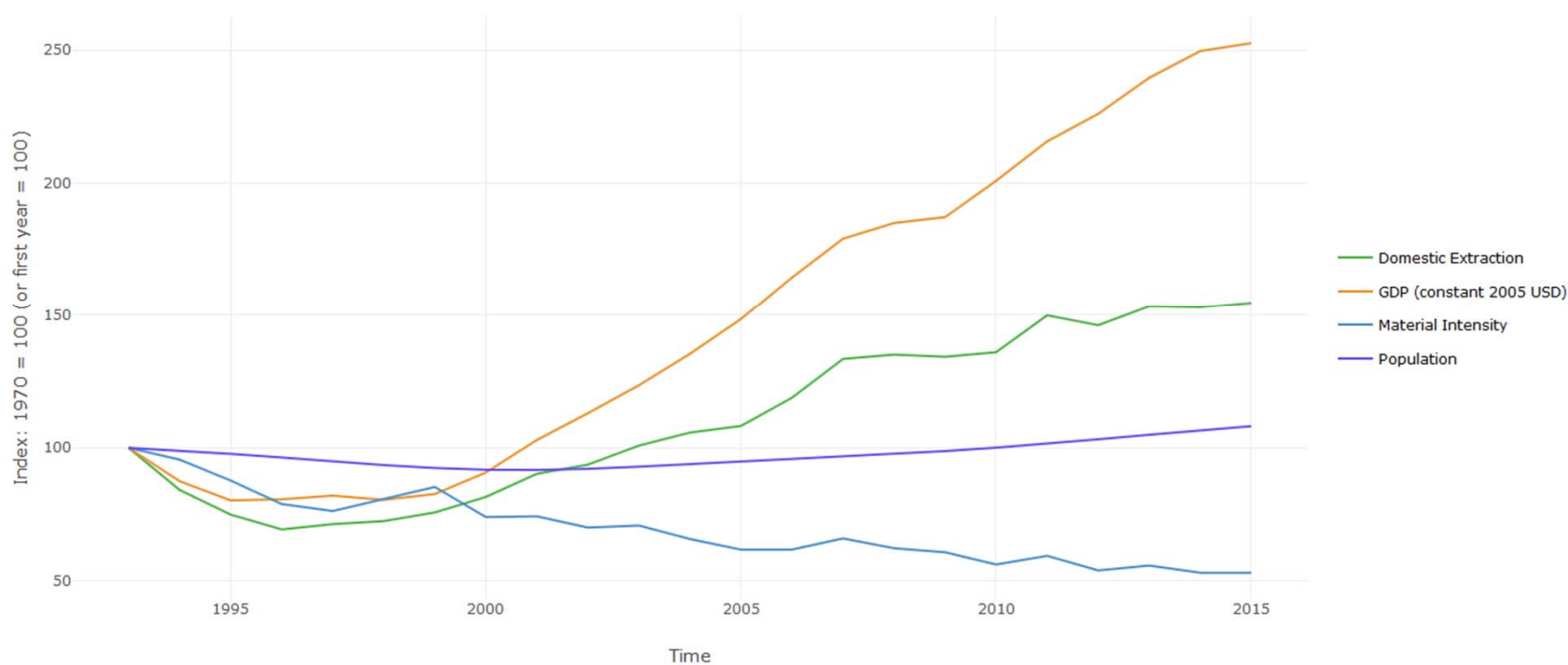
Comparison of flows/indicators in World in 1993-2015



Quelle: UN Environment, 2017

Re-coupling in Kazakhstan

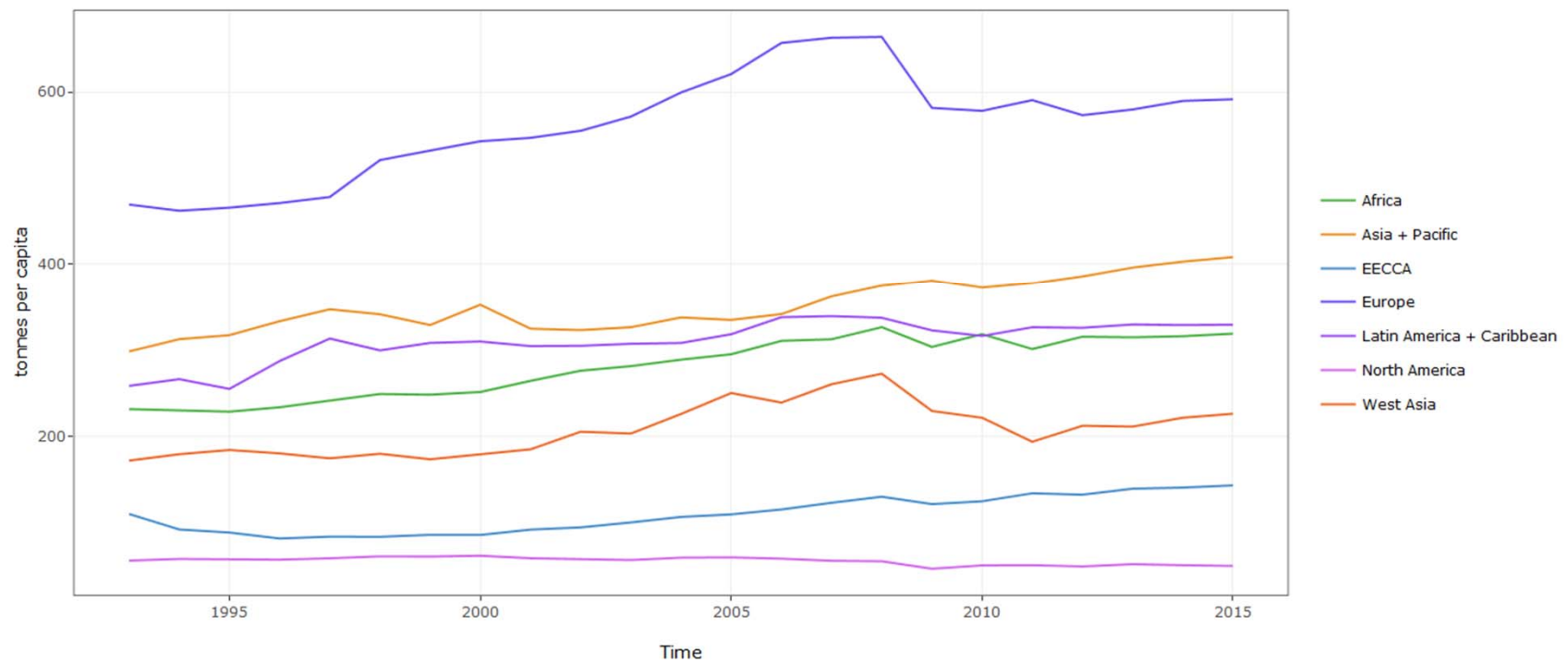
Comparison of flows/indicators in Kazakhstan in 1993-2015



Quelle: UN Environment, 2017

DMC by country groups

Trend of Domestic Material Consumption per capita in 1993-2015 by country/region



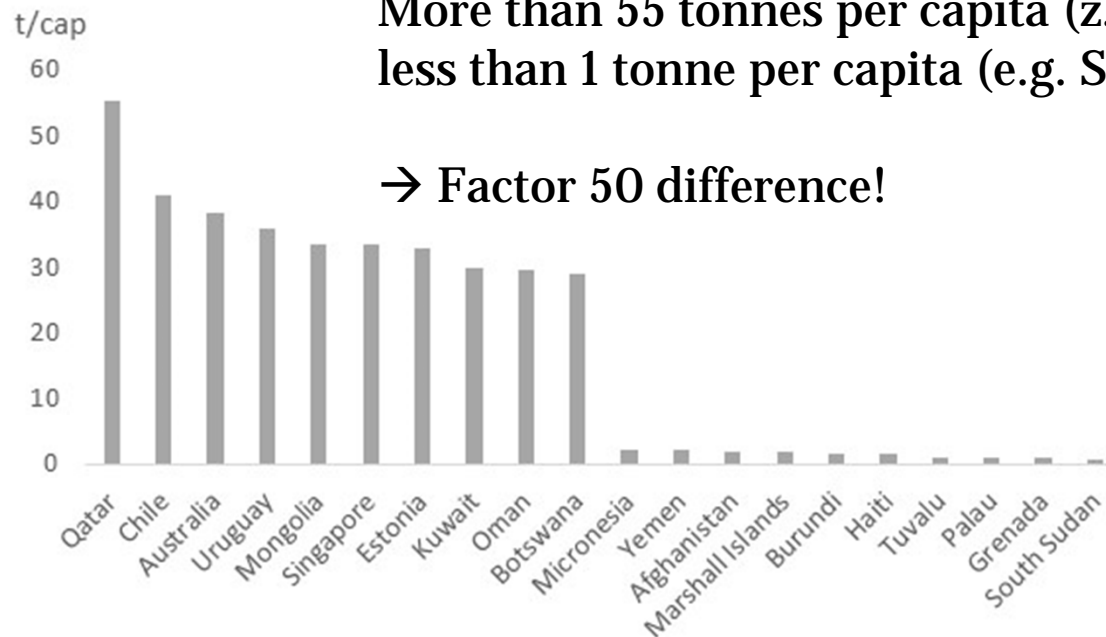
Source: UN Environment, 2017

Large differences between countries

Global average in DMC (2015): 11,1 t/cap

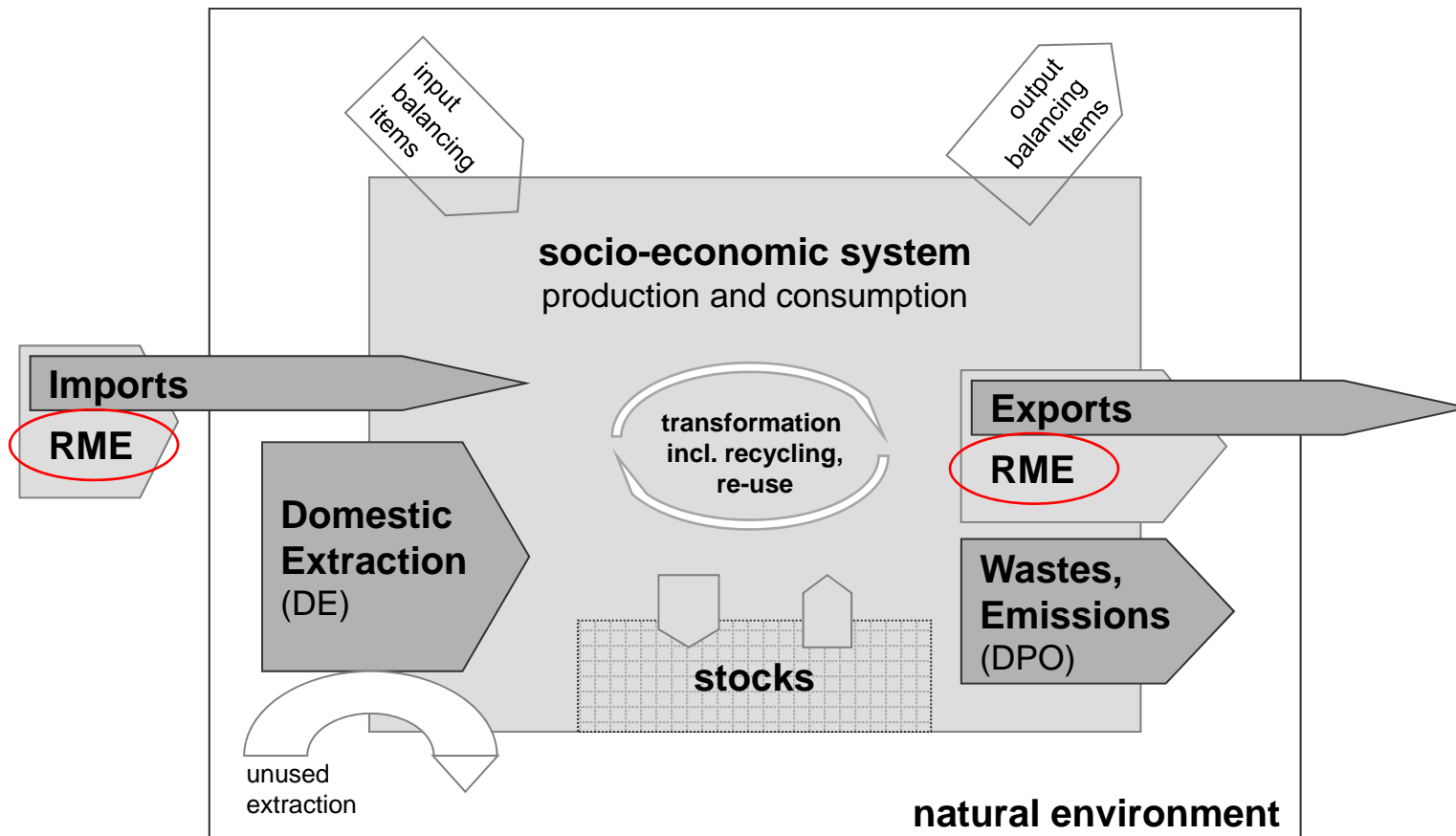
More than 55 tonnes per capita (z.B. Qatar) versus less than 1 tonne per capita (e.g. South Sudan)

→ Factor 50 difference!



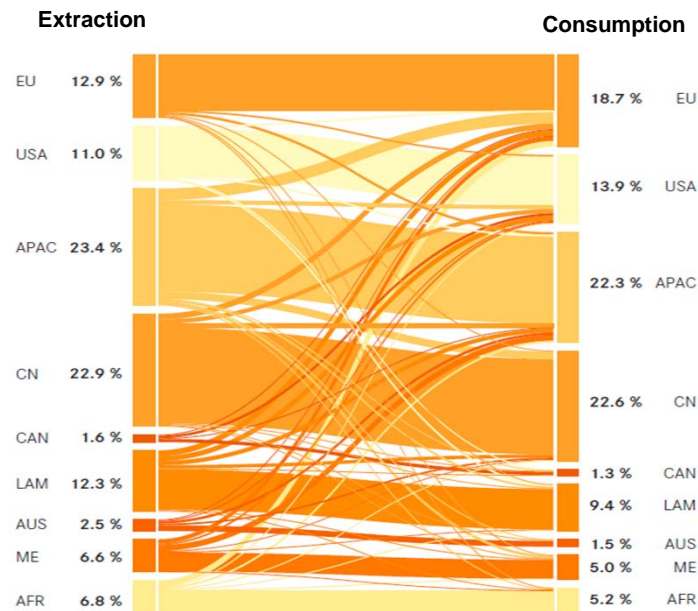
Source: UN Environment, 2017

Materialbilanz nach EUROSTAT

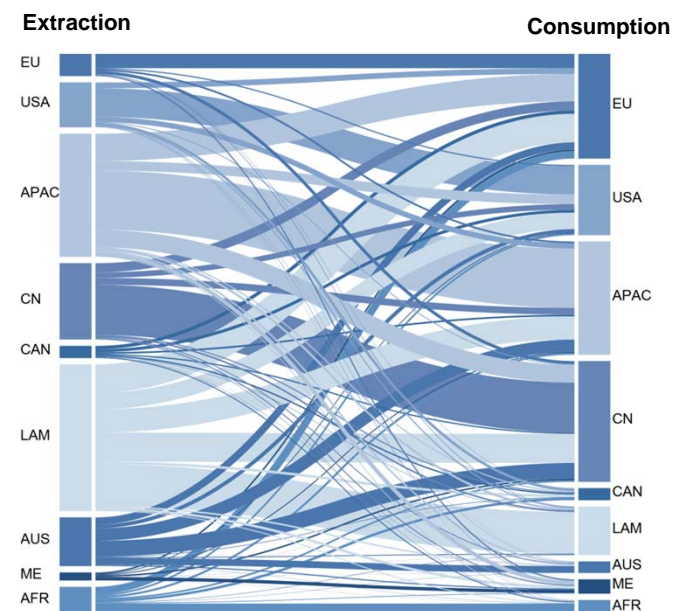


From extraction to consumption

All materials
(66 billion tonnes)



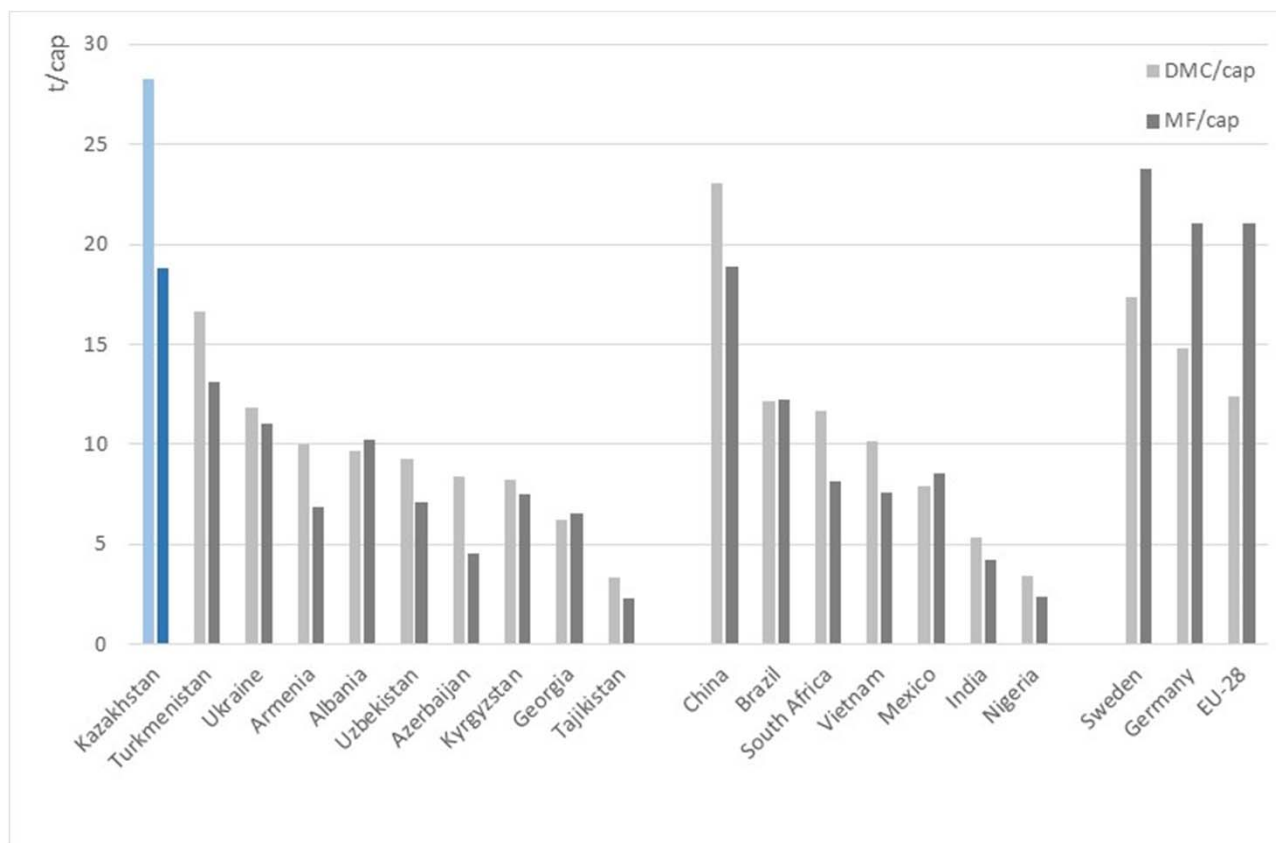
Metals
(6,7 billion tonnes)



EU ... Europe; USA ... United States; APAC ... Asia/Pacific; CN ... China; CAN ... Canada;
LAM ... Latin America; AUS ... Australia; ME ... Mittle East; AFR ... Africa

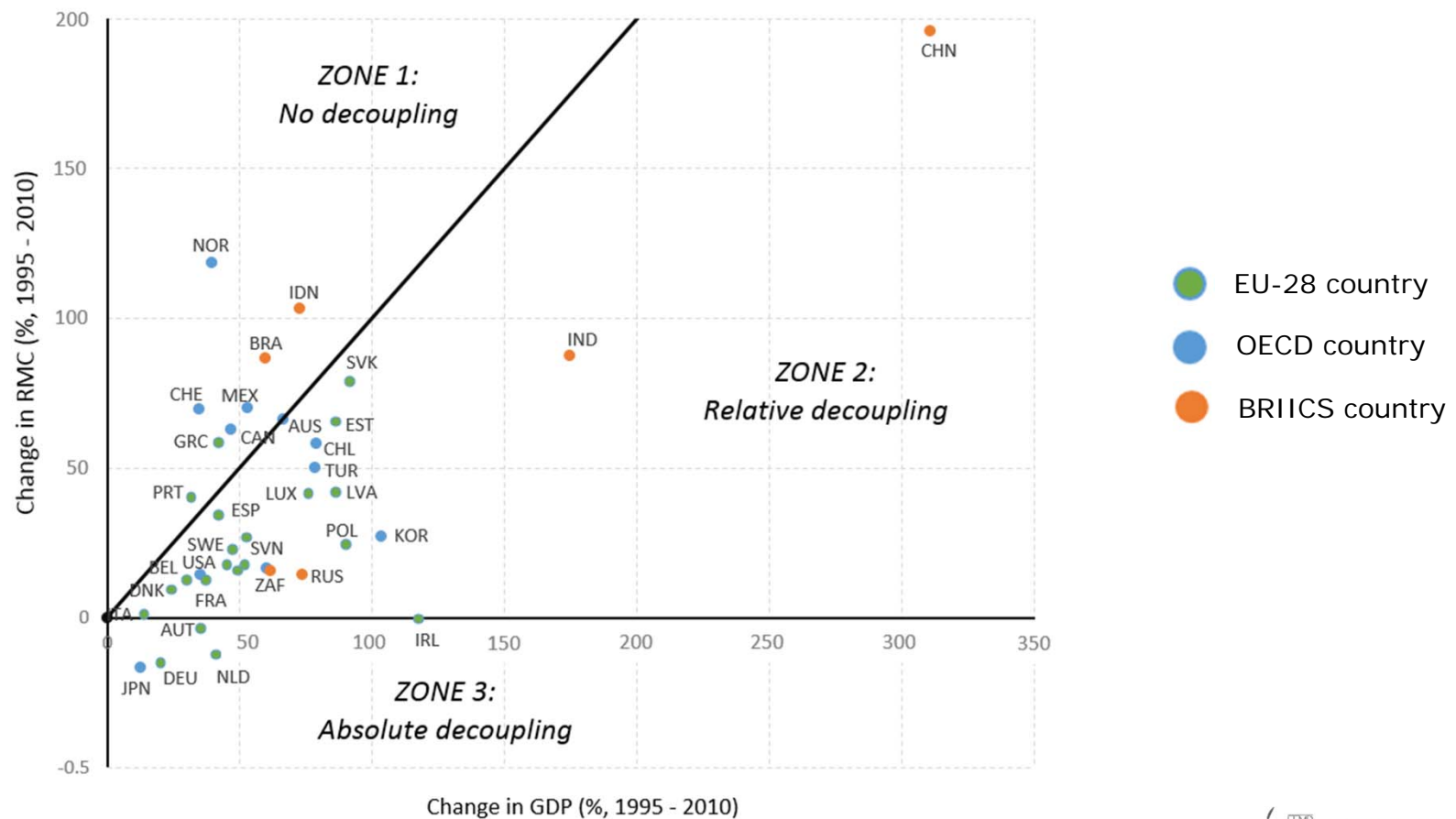
Source: Giljum und Lutter, 2014

Production vs. consumption, 2013



Source: WU, 2017

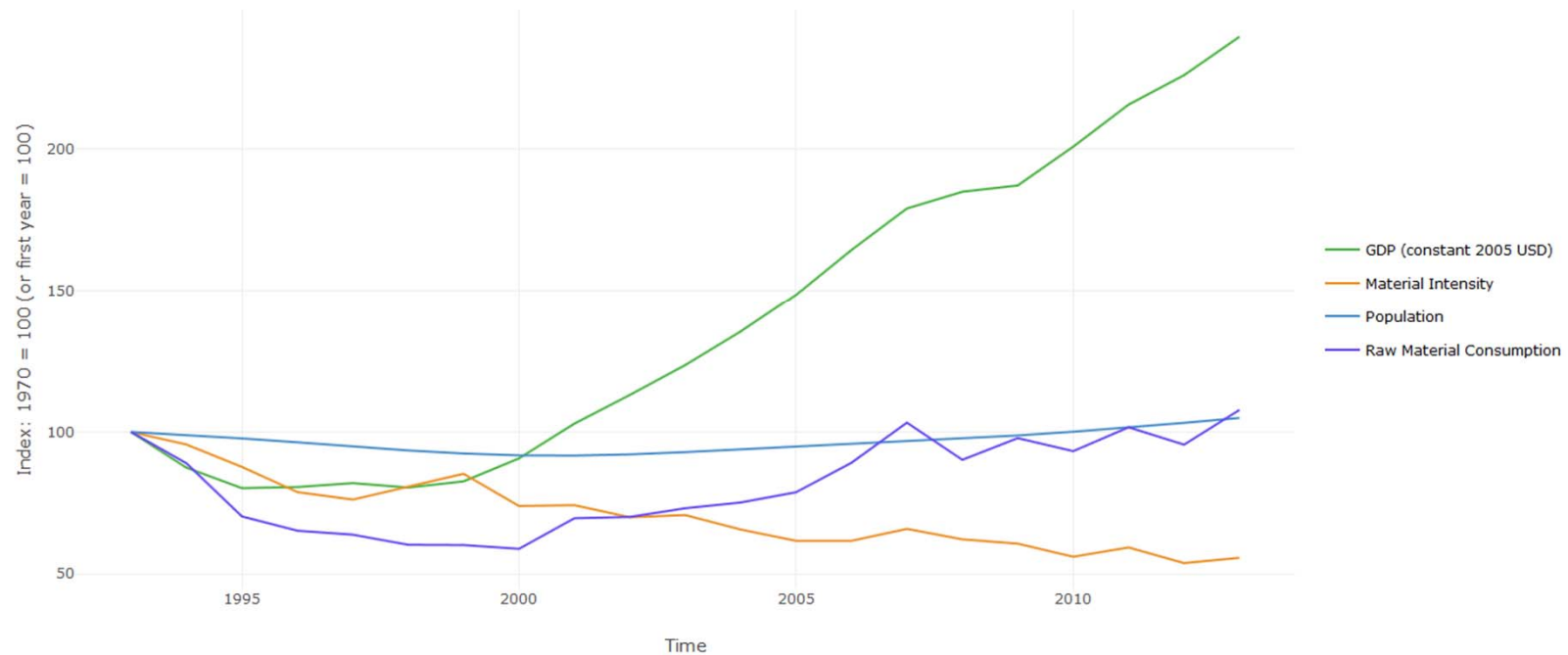
Decoupling of material footprint from economic growth



Source: Giljum et al., 2017

Decoupling of material footprint from economic growth

Comparison of flows/indicators in Kazakhstan in 1993-2013



Source: UN Environment, 2017

Conclusions

- The UN IRP provides the Global Material Flows Database for global and national MFA analyses.
- The results show how different indicators can convey different messages.
- Kazakhstan shows increasing trends in material extraction as well as consumption.
- Kazakhstan shows trends of relative decoupling.
- The data contained in the UN IRP's Global Material Flows Database stems from international databases. National data would deliver more accurate results.

Thank you for your attention!



VIENNA UNIVERSITY OF
ECONOMICS AND BUSINESS

DEPARTMENT SOCIOECONOMICS

Welthandelsplatz 1, 1020 Vienna, Austria

DR. STEPHAN LUTTER

T +43-1-313 36-5754

stephan.lutter@wu.ac.at
www.wu.ac.at