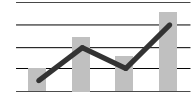4. International Degrowth Conference, Leipzig

Measuring progress towards a green economy in Germany

Christian Lutz (GWS), Roland Zieschank (FFU)

gws

ffu

Background:

Research Project:

"Green Economy: Measuring sustainable welfare"

⇨ Funded by the German Federal Environmental Agency/Umweltbundesamt

⇨ 2011 – 2014

⇨ Final report planed in October 2014

⇨ Orientation on 'Planetary boundaries'

⇨ Transition strategy encompassing the whole economy

⇨ Green Economy may lead to a shrinking GDP

⇨ Structural change: Fostering environmental production, products and services

⇨ Important: Sustainable welfare – not GDPgrowth or degrowth

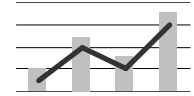⇨ System of indicators for policy and the public
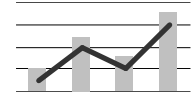
Definition:

Green Economy describes an economic strategy that protects the climate, that continually reduces harmful emissions and pollutant inputs into the environment, that is based on closed cycle and waste management, that absolutely reduces the use of resources and that strictly acts in harmony with the nature and environment.

The concept of the "Green Economy" positively connects ecology and economy to increase social welfare and advance social justice. It requires an action plan for all stakeholders in economy and society on the goods, labour and financial market, with regard to both supply and demand.
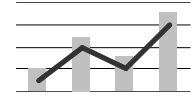
Source: BMU 2012.

Overview of the project

AP 1: Synopsis of relevant concepts to measure „Green Economy and sustainable welfare"
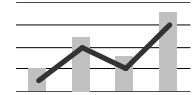
AP 2: Concept to measure progress towards a Green Economy

AP 3: Practical test

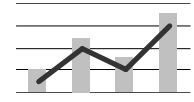AP 4: Application, communication and outlook

AP 1: Synopsis of relevant concepts to measure „Green Economy and sustainable welfare"

Other concepts:

⇨ OECD 2012: Green growth, including national applications to Germany (Federal Statistical Office) and the Netherlands (Statistics NL)

⇨ World bank: Total wealth-concept

⇨ EU: "iGrowGreen"

⇨ UNEP 2012: Measuring an inclusive green economy

⇨ Research projects like EU FP 6 "IN-STREAM"

⇨ Indicators not worked out to a more comprehensive definition of welfare

⇨ Concepts not designed to capture processes towards a Green Economy in full detail

AP 2: Concept to measure progress towards a Green
Economy
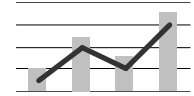
## Overview of Dimensions and Main Indicator Categories

- **Use of the Environment (A)**
  - Resource Use
  - Environmental impacts (physical)
  - Environmental Costs and Damages (monetary)

- **Natural Capital (B)**
  - Resources: Stocks
  - Biodiversity
  - Ecosystems: Stocks
  - Ecosystem Services
  - Natural Capital Investments

- **Environmental Quality of Life (C)**
  - Health / Quality of Life
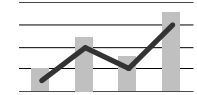
Overview of Dimensions and Main Indicator Categories

- **Economic Dimension and Policy Areas (D)**
  - Economic Contribution of green production and consumption
  - Resource Management and Emission Abatement
  - Green Finances
  - Defensive Spendings for Environmental Protection

- **Political Conditions and Measurements (E)**
  - Reduction of environmental harmful Subsidies
  - Environmental Taxes and Emission Trading
  - Environmental Measures and Regulation
  - Consulting and Information

- **Background Information: Economic and Social Framework (F)**
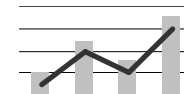
Exmple: Indicators of category A - physical resource use (domestic)

Indicator/ index	Definition	Source	Status
Energy use	Total primary energy consumption in PJ	UGR	ZK
Energy use	Primary energy consumption by sources in PJ	UGR	ZI
Water use	Water use by economic activities in bill. m^3	UGR	ZI
Land use (settlement, transportation)	Settlement and transportation area increase in ha/day	NI/UGR	ZK
Domestic material consumption	Domestic material consumption (DMI, abiotic) in mill. Tonnes	UGR	Z
Domestic material input	Domestic material input (DMC, abiotic) in mill. Tonnes per capita	UGR	ZK
Wood	Share of wood extraction in % of extractable increase	UGR	Z
Fish (from inland waters)	Supply in Tonnes	BMELV	I

GWS/FFU: **Concept for measuring the state of a green economy**

F. Background information: economic and social development

Production
Consumption
Defensive environmental protection expenditures

Labour market
Distribution
Finances

Green competences

D. Green Economy: economic dimension and fields of action

Economic contribution of Green Economy
Resource management and emission abatement
Green finances

| Corporations | Households | Government |

E. Policies: institutional framework and measures

Policy measures for a Green Economy
Reducing environmentally harmful subsidies
Environmental taxation and tradable emission permits
Political measures,

A. Use of the environment

Physical resource use (domestic and global)

Environmental burdens (physical)
Environmental damages (monetary)

C. Environmental quality of life

Health/ quality of life

Ecosystem services

Resource function

Sink function

Natural capital investments

B. Natural capital
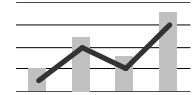
Resource stocks
Biodiversity
Ecosystems

© GWS/FFU

AP 3: Practical test

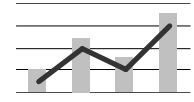## Pratical test: energy transformation in Germany

◆ **Use of the economy-energy-environment model PANTA RHEI**

⇨ Consistent projections of future developments up to 2030

⇨ Reference scenario without "Energiewende"

⇨ Energy transformation scenario including additional measures to reach targets of the "Energiewende"

Results: impacts of energy transformation (2030)

- Mainly positive

  - Lower primary energy supply (-12.5% against the reference)

  - Share of renewables will increase

  - Less fossil fuels and related emissions (GHG emissions -16%)

  - Less damages due to CO2 emissions (16 billion €)

  - GDP increase (30 billion € or 1.1%)

  - Higher employment

- Some negative (or unchanged)

  - Higher domestic material consumption

  - More built-up area

- Many indicators are not available or cannot be linked to the model

- Difficult to capture indicators of dimensions **B natural capital** and **C environmental quality of life**

AP 4: Applications, communication and outlook
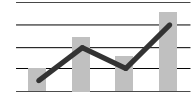
Links to international initiatives

- **UN**: System of Environmental-Economic Accounting (SEEA)

- **EEA**: An experimental framework for ecosystem capital accounting in Europe

- **OECD**: Green growth indicators in practice (see national tests for Germany/NL)

- **World bank WAVES**: Wealth Accounting and the Valuation of Ecosystem Services

  ⇨ Searching applications

     ▪ „Compeling body of evidence"

     ▪ „SEEA modeling" of general interest

- **Global Green Growth Institute/OECD/UNEP/World Bank**: Green Growth Knowledge Platform Moving towards a Common Approach on Green Growth Indicators

- **ILO**: Methodologies for assessing green jobs
 (Similar for energy by IEA/IRENA)
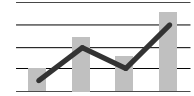
National reporting

Transformation towards a Green economy requires:

(1) a longer transitional phase in which social, political and economic learning processes can take place,

(2) processes of readjustment, realignment and restructuring as well as

(3) consideration of the consequences for the foreign trade relations in a Green Economy.

Such a complex process needs systematic, accompanying information systems for policy and administration in Germany

⇨ Strategic importance

⇨ Periodical reporting
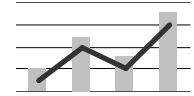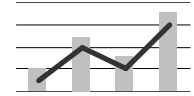
Functions and Potentials of the Indicator System

◆ Main Goal: Social Welfare – not Growth or Degrowth

◆ Green Economy as a transformation process - Orientation for actors: Policy / Administration – Business – Civil Society

◆ Green Economy as a mile stone to a Green Society – not as just a „technological project"
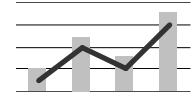
Thank you for your attention!

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Data availability

◆ **Already elaborated for more traditional/conventional indicators of the economic and environmental dimension**

⇨ System of National Accounts (SNA)

⇨ System of Environmental-Economic Accounting (SEEA)

◆ **Poor statistical database for**

⇨ A Use of the environment

▪ Monetary damages taken from the National Welfare Index (NWI)

⇨ B Natural capital

⇨ C Environmental quality of life

◆ Important to define „Wish indicators"

⇨ Not (yet) available in statistics

⇨ They have to be asked for