

# Environmental accounting in Europe

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# Summary

- History
- Data currently collected and examples
- EU regulations
- From data and accounts to indicators
- Future plans

# History

- Environment accounts work started in 1993 following Brundtland report and first Rio conference (1992)
- Concern was “green GDP” allowing for depletion of natural assets.
- Early work focused on forests, sub-soil assets (oil, gas, coal, minerals...)
- However each asset interested only a few countries so work at EU level was discontinued around 2003 (though individual countries continued)

## History (2)

- Early work also included accounts which pick up the environment-related flows in the economy
  - Environmental protection expenditure (joint questionnaire with OECD)
  - Environmental taxes (price signals, also with OECD)
  - Air emissions by industries and households
- Development work produced many handbooks and contributed to SEEA 2003 then SEEA 2012.

## History (3)

- ESS Strategy on Environmental Accounts 2008
- New unit (E2) created at Eurostat in 2010
- Voluntary data collection in several areas
- First Regulation was approved in July 2011
- Full information on Environmental accounts on the Eurostat website:

[http://epp.eurostat.ec.europa.eu/portal/page/portal/environmental\\_accounts/introduction](http://epp.eurostat.ec.europa.eu/portal/page/portal/environmental_accounts/introduction)

## Eurostat environmental accounts activities – current data situation

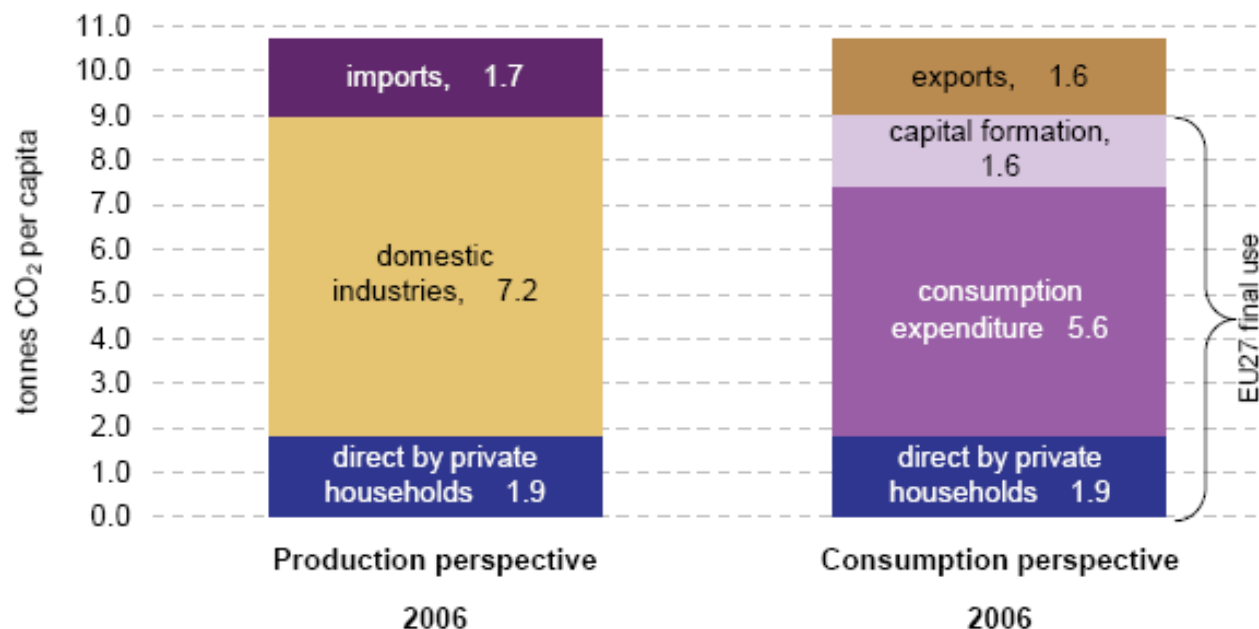
- Regular collection of data on a voluntary basis in the following areas:
  - Air emissions in a breakdown by economic activities
  - Economy-wide material flow accounts
  - Environmental taxes – revenues as well as taxes paid in a breakdown by economic activities (annual)
  - Environmental expenditure (two-yearly) with joint OECD/Eurostat questionnaire
  - Environmental expenditure in a regional breakdown
  - Environmental goods and services sector (two-yearly)

## Eurostat environmental accounts activities – current situation

- Experimental collection of data on a voluntary basis in the following areas:
  - Environmental subsidies and similar transfers
  - Energy accounts
  - Resource management expenditure

## Example: IO analysis with air emission accounts

Figure 1: Domestic and global CO<sub>2</sub>-emissions - production and consumption perspective, EU27 2006 (tonnes per capita)

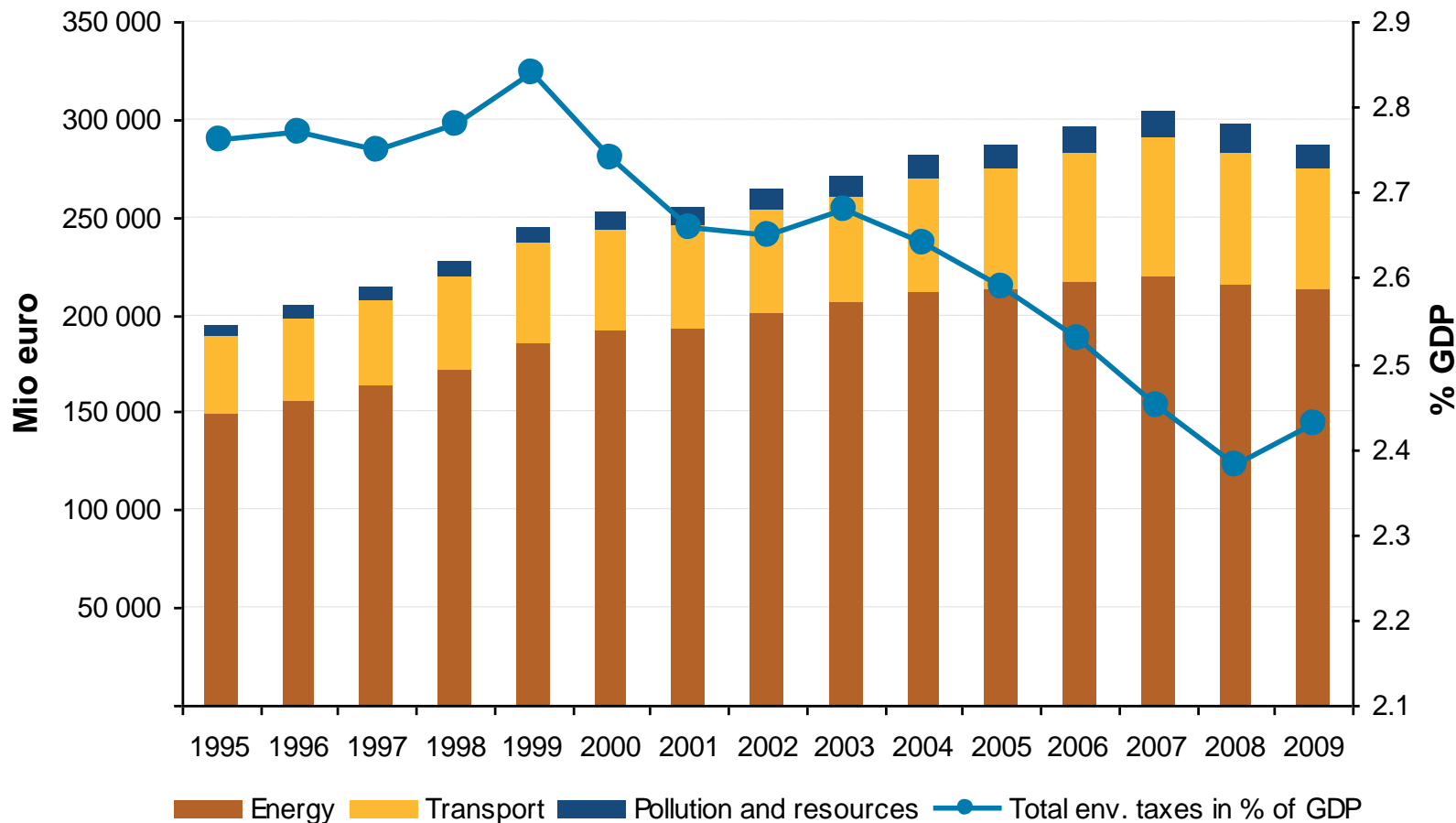


Source: Eurostat (online data codes : [env\\_ac\\_ainacehh](#), [env\\_ac\\_io](#))

[http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-SF-11-022/EN/KS-SF-11-022-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-11-022/EN/KS-SF-11-022-EN.PDF)



# Example: Environmental taxes revenue

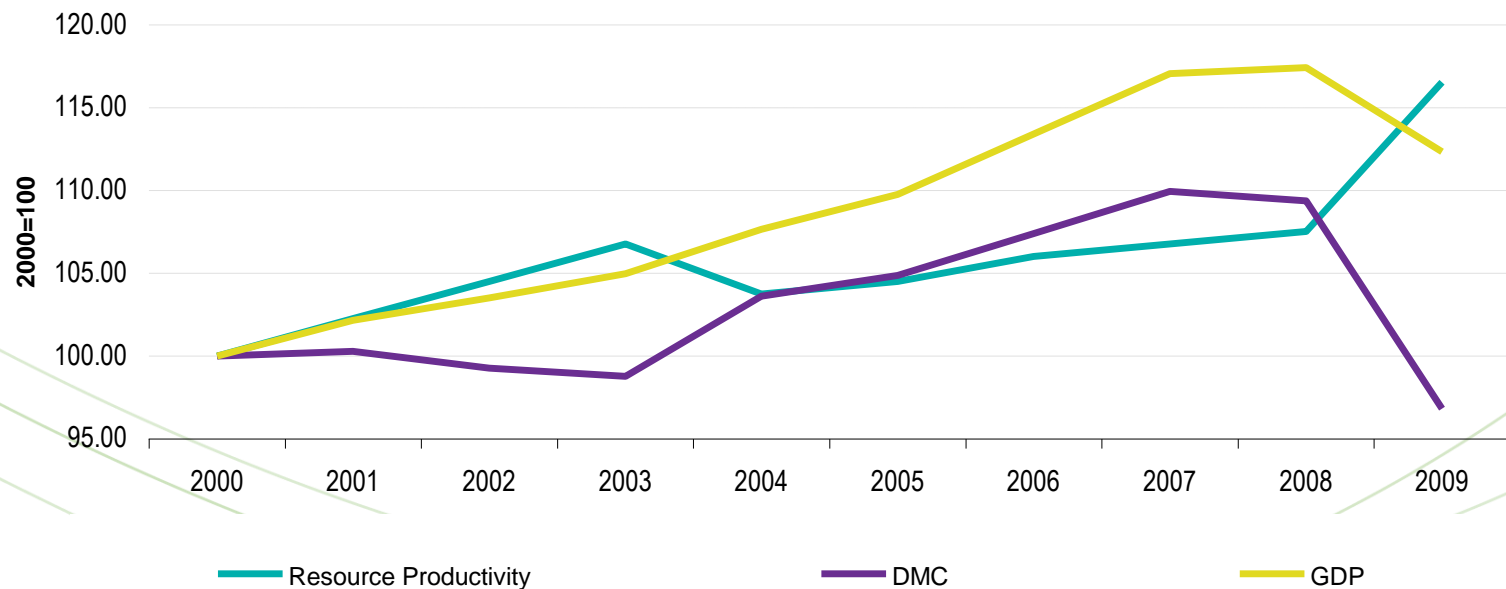


[http://epp.eurostat.ec.europa.eu/portal/page/portal/product\\_details/publication?p\\_product\\_code=KS-SF-11-067](http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-SF-11-067)

# Example: Resource productivity

**Figure: Resource Productivity in comparison to GDP and DMC, EU-27, 2000-2009**

(Index: 2000=100)

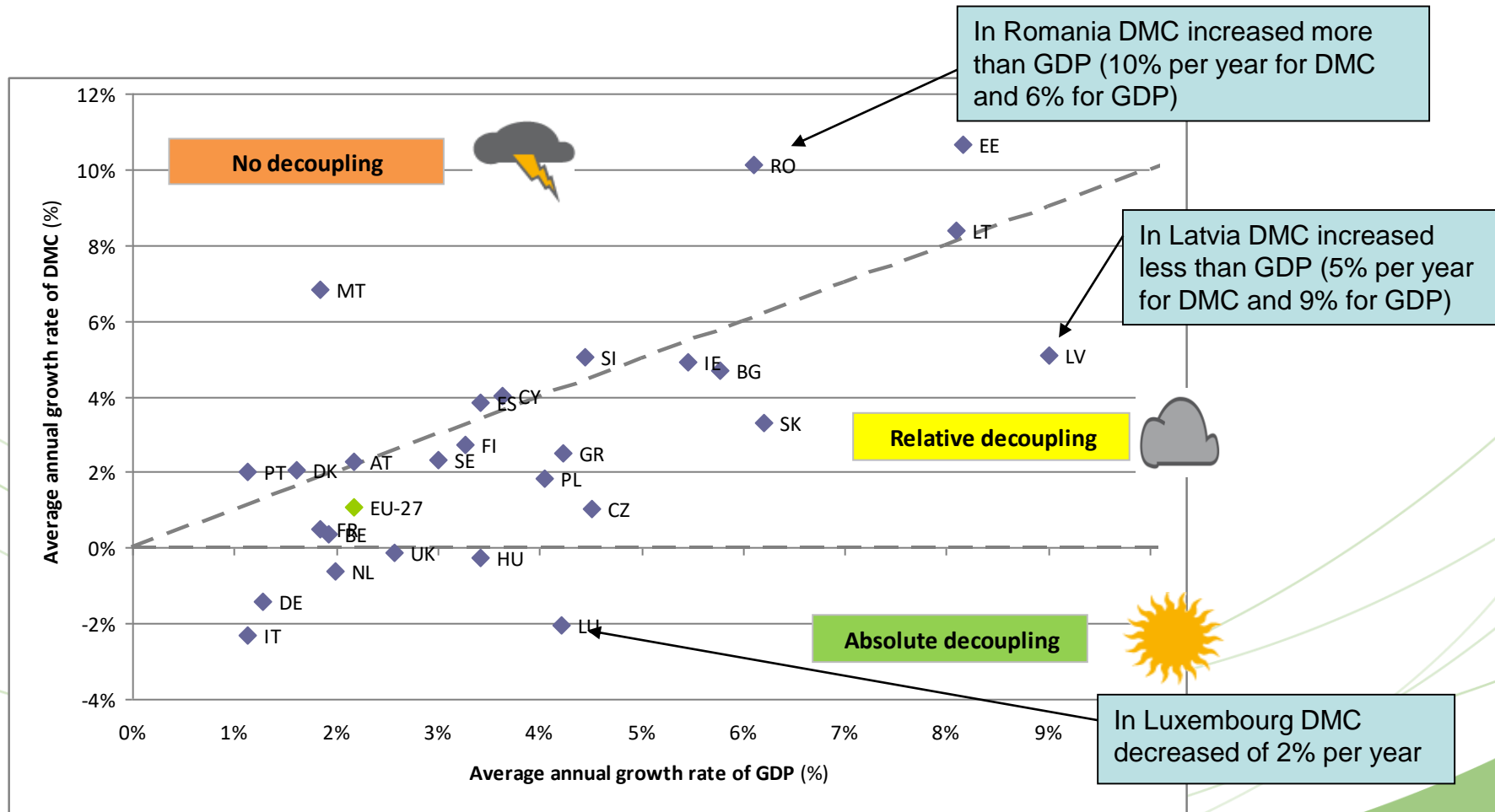


(<sup>1</sup>) GDP (= Gross Domestic Product) in chain-linked volumes, reference year 2000; suited for comparing single country over time

(<sup>2</sup>) DMC = Domestic Material Consumption

Source: Eurostat (online data code: [nama\\_gdp\\_k](#), [env\\_ac\\_mfa](#))

# DMC and GDP growth rates in EU and countries between 2000 and 2007 and decoupling issues



# Regulation = an EU law

- By 2011, 3 areas mature enough to adopt a Regulation which commits all (27) EU Member States to provide data from 2013 onwards on:
  - Air emissions accounts by industries (ISIC and households)
  - Environmentally-related taxes
  - Material flow accounts (economy-wide, no industry breakdown)
- Second batch is now under preparation
  - Environmental protection expenditure
  - Environmental goods and services sector
  - Physical energy flow accounts (by industries)

June 2012

Environmental accounting in  
Europe



# Overview of RE indicators from official statistics

## STATISTICS and ACCOUNTS

- LU/LC
- Energy Statistics
- Waste Statistics and other waste legislation (Waste Data centre)
- Chemicals
- Water
- Forestry
- Environmental Accounts
- EE SUIOT

## Some INDICATORS

LU indicators  
Protected areas

Energy efficiency  
CO2 early estimates  
Renewable energy

Waste generation (activity/waste category)  
Waste Treatment (Recycling, incineration...)  
Municipal Waste generation and treatment  
Hazardous waste

...  
Production harmful / toxic chemicals

Exploitation of water resources  
Wastewater treatment  
Forest surface

Resource productivity  
DMC/RMC  
Environmental taxes / protection  
expenditure indicators  
GHG Emissions

Carbon footprint

## Sponsorship on measuring progress, well-being and sustainable development. Conclusions TF2

- Further develop the integrated system of environmental accounts as a basis for deriving indicators
- Use Supply and Use Input-Output Tables to analyse the “consumer perspective” and derive so called “footprint” indicators
- ...but also develop indicators from existing statistics
- Design, develop and disseminate indicators in communication with stakeholders and data users
- Consistent framework, small number, stability, timeliness and target or desired direction – essential

[Report of the Task Force 2 - Environmental Sustainability](#)

# Sponsorship priority actions Level 1:

## Develop energy flows accounts

2012-2013

- Energy consumption by economic activity (NACE breakdown)
- Energy efficiency by economic activity
- Energy productivity of economic sectors

## Indicators related to climate change

2012-2014

- Carbon intensity by economic activity (NACE breakdown)
- Carbon productivity by economic activity
- Expenditure related to climate change adaption

## Environmentally-extended Supply and Use Input/Output Tables (SUIOT)

2013-2014

- Emissions “embedded” in imports
- Emissions induced by final use of products, by product group
- National or EU carbon footprint

## Early estimates of CO2 emissions

2011-2012

## Raw material consumption

2012-2014



# Sponsorship priority actions Level 2:

## Environmental goods and services (EGS) module

2012

- “Green” employment
- Turnover generated by “green” economy

## Environmental protection expenditure (EPA) module

2013-2014

- National expenditure on environmental protection
- Total investment and current expenditure by households, government and industry
- Expenditure by environmental domain (air and climate, wastewater, waste, other)

## Asset accounts for natural resources, sub-soil assets, energy assets

2013 to long term

- Depletion (change in stock levels) of natural resources assets, e.g. energy reserves
- National saving net of total natural resource depletion
- Expected life length of a natural resource asset

## Use Land Use/ Land Cover data to build relevant indicators on landscape and biodiversity

2013 to long term

- Landscape state and biodiversity
- Changes in land use

# Sponsorship priority actions Level 3:

## Improve existing water statistics

2013-2014

- *Water abstraction and use by river basin or region*
- *Water use by economic activity (NACE breakdown) – derived from accounts*

## Develop water accounts

Long-term

## Harmonise indicators on waste

2012-2014

- *Waste generated by economic activities (NACE breakdown)*
- *Waste recycled by economic activity*
- *Recycling rate of waste by economic activity*

## Develop waste accounts

Long-term

# Further developments

- Users want more...
  - Commission departments and European Parliament want more: first Regulation explicitly mentions water, waste, forests
- ...but compilers see problems
  - Staff resources insufficient
  - Missing or incomplete data
  - Some remaining methodological issues
  - Statistics versus modelling.
- Statisticians need support from policy-makers, potential users.

# Biodiversity, Ecosystems, stocks

- Beyond scope of ESS in many cases
- However, role of ESS should be established
- Large amount of info on stocks available but not harmonized
- Mandate of EP to progress in these areas (EEA Regulation)
- Actions proposed in TF environmental sustainability
- RE indicator set will provide motivation

## Actions:

1. **In general: start reflecting on stock measurement**
2. **Land Take: Explore improvement in frequency and timeliness**
3. **Forest inventories: Better harmonization feasible?**
4. **Fast track action on Ecosystems Accounts and SEEA**
5. **Specific WG's to follow up by DIMESA mandate**
6. **Waste: Important milestone in June 2012 due to data**

## Eco-system accounts – Eurostat role

- **Europe:** provide data and where possible methodological advice to EEA and others
- **Linked to work on regional statistics, agriculture and forestry statistics (incl. LUCAS)**
- **International:** assist (and finance?) the writing of the SEEA Volume 2 on experimental eco-system accounts

# Environmental-Economic Accounting

- SEEA and EU work seek to link environmental statistics with national accounts (and input-output) to study mutual interactions between economy and environment.

# Thank You Very Much

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