



The System of Environmental- Economic Accounting (SEEA) and its contribution to Climate Change Policies

Alessandra Alfieri
United Nations Statistics Division



Outline

- What is the SEEA?
- SEEA and emission inventories
- Policy relevance of the SEEA
 - Greenhouse gas emissions
 - Impacts
 - Mitigation
 - Adaptation
- Conclusions



Brief history

- 1992: Agenda 21 called for “establishing systems for integrated environmental and economic accounting in all member States at the earliest date”
- SEEA-1993: satellite accounts
- SEEA-2003: major step forward towards harmonization however unresolved issues remain
- UN Statistical Commission therefore established the UN Committee of Experts in Environmental-Economic Accounting (UNCEEA) in 2005
- SEEA to become an international statistical standard by 2011
- UNCEEA identified Climate Change (CC) as one of the overarching themes for the SEEA revision



What is SEEA?

- Integration framework that measures interaction between economy and environment
- Consistent with System of National Accounts (SNA)
 - Common classifications (ISIC, CPC)
 - Common concepts (e.g. residence)
- Expands the analytical capacity of National Accounts
 - Enlarged asset boundary (e.g. ecosystems)
 - Includes complementary elements (e.g. physical information, etc.)
 - Elaborates aspects that are not explicitly identified in the accounts (e.g. ETS)
- Used to identify more sustainable paths of development (indicators and modeling)



Environmental-Economic Accounting vs Environment Statistics

Environment statistics:

- Often developed to answer one particular question or problem
- Difficult to figure out if all information is included
- Not always easy to see the whole picture, or how it relates to other things



Source: Julie Hass



Environmental-Economic Accounting vs Environment Statistics

Environmental accounts:

- Help to make sense of the larger picture
- Help to identify pieces that are missing
- Can make connections to other statistics - especially economic statistics

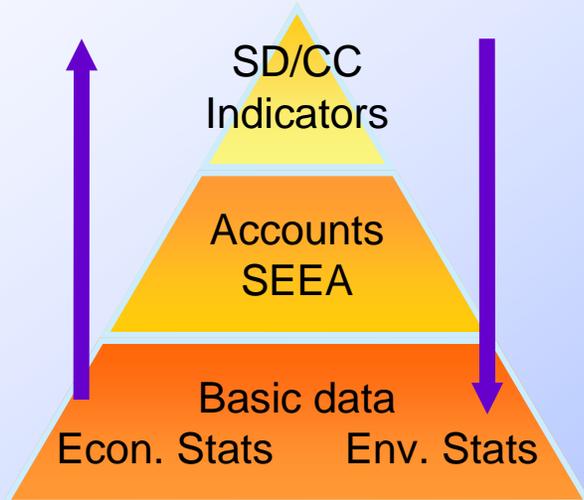


Source: Julie Hass



Why an accounting approach?

policy
relevance



interlinkages -
underlying causes

Provides **added value**:

- Implicitly defines ownership and hence responsibility for environmental impacts
- Improves statistical quality by guaranteeing consistency (checks and balances)
- Provides policy-makers with coherent time series of data, indicators and descriptive statistics for scenario modeling



SEEA modules

- **Asset accounts:** record stocks and changes in stocks (flows) of natural resources such as land, forest, water and minerals
- **Physical and hybrid flow accounts:** provide a systematic physical description of production and consumption processes, including their natural resource inputs, product throughputs and outputs i.e. wastes
- **Monetary accounts:** separately identify environmentally-related transactions presented in the existing SNA flow accounts in order to make them more explicit for analysis
- **Environmentally-adjusted aggregates:** combine modules of SEEA to form a full-sequence of accounts from which aggregates such as an eaGDP ('Green GDP'), or Net Saving ('Genuine Saving'), can be derived. These adjustments could include depletion, defensive expenditures and degradation.



SEEA and UNFCCC reporting

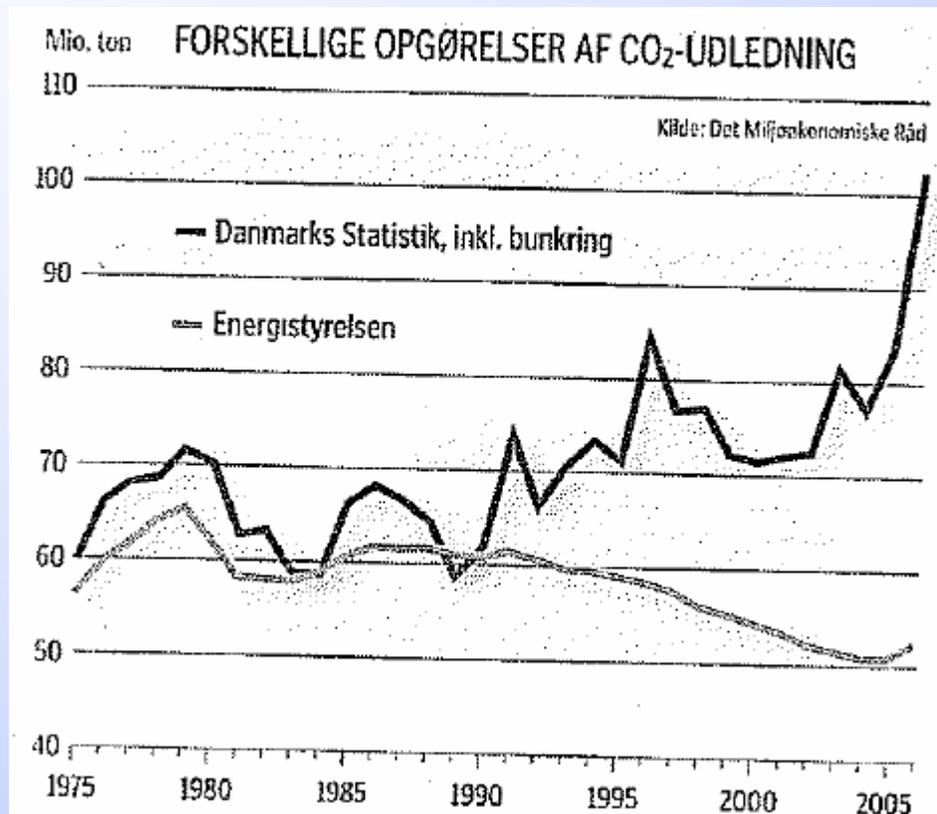
SEEA Emission Accounts	UNFCCC reporting
Residence	Territory
Activity (ISIC)	Process (IPCC source classification)

- Different policy concerns
- How to harmonize them?
 - *Need to better understand differences (bridge tables)*
 - *Need to harmonize and further develop common classifications so as to use the same data twice*
 - *Need to improve coordination*



Example: Danish newspaper

“Is decoupling a myth?”

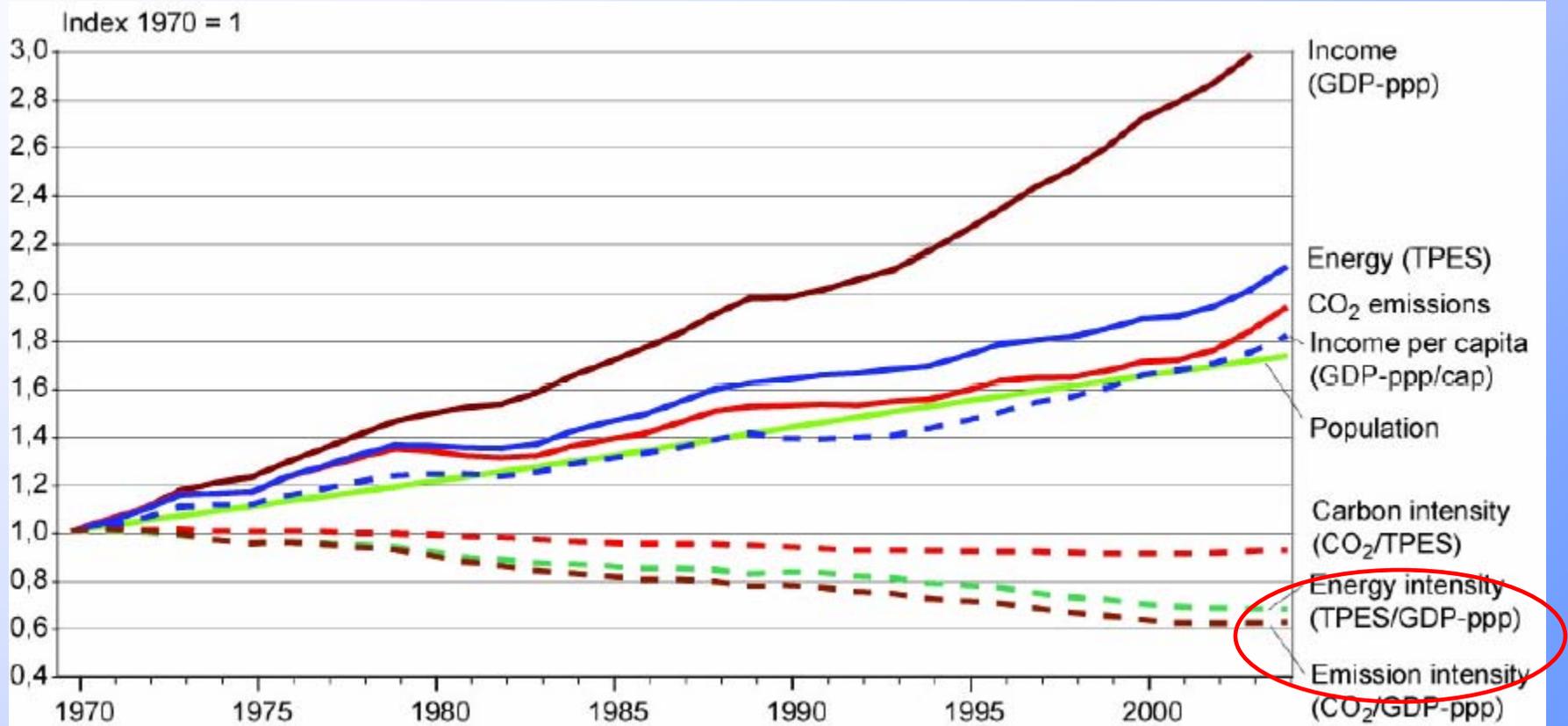


Conceptual differences matter and are highly policy relevant for Denmark

Source: Dagbladet Information



Intensities of energy use and CO₂ emissions, 1970-2004



Source: IPCC AR4 - WG 3 p.



Policy relevance – mitigation

Value added of SEEA:

- GHG/aerosol emissions by industry
- Energy/emission intensity by industry (consistently)

Integration with economic statistics allows to :

- Asses the effectiveness of carbon taxes on energy intensity of industries
- Analyze the effectiveness of ETS
- Assess expenditures on technology and their financing

Applications of SEEA allows to:

- Assess the effects of ‘carbon leakage’ through decomposition analysis of driving forces of emissions, and
- Calculation of indirect emissions



Policy relevance – impacts

Land and ecosystem accounts (LEAC)



- Track changes in land cover/use over time allow to assess deforestation, desertification etc.
- Same approach as IPCC estimates for forestry sector

Water accounts

Link the economy with the hydrological system thus allowing for measuring:

- Water availability
- Water efficiency by economic activity, water reuse
- Hydraulic infrastructure in place (physical and monetary)
- Fees, taxes, permits
- Financing

LEAC and Water Accounts can be compiled at any level of disaggregation

➤ *Need to develop and harmonize land use classifications*



Policy relevance – adaptation

Value added of SEEA:

Integration with economic statistics provides information on:

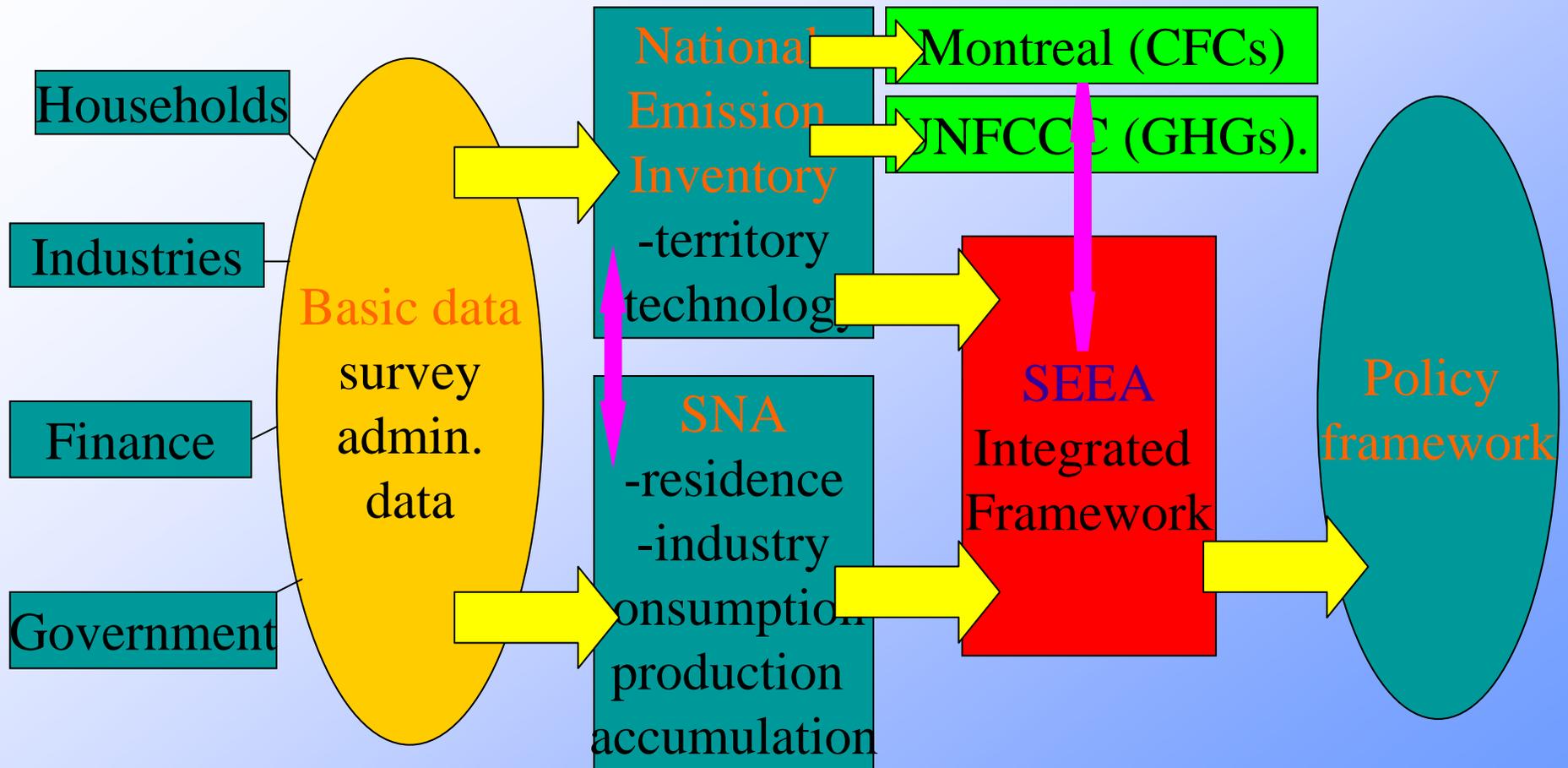
- Technologies and their financing (within country + between countries)
- Capital investments (stocks of fixed assets e.g. dykes, levees) and their depreciation

Functional classification in SEEA allows:

- Assess impacts and effectiveness of adaptation strategies
 - Information from the accounts input in CGE models to assess trade-offs between mitigation and adaptation strategies



Statistical coordination



Need to review statistical coordination in data collection and compilation



Conclusions

- A lot of information is available but it needs to be organized
- SEEA provides the integration framework of basic statistics for the derivation of climate change indicators
- Allows for identification of gaps and overlaps of data and leads to a more efficient production of information
- Statistics collected once should be used for multiple purposes (UNFCCC reporting, SEEA, etc.) and will
 - Reduction in response burden
 - Improvement in data quality
 - Lower costs of data production
- SEEA brings value added to CC policies
- SEEA can be compiled with limited additional resources but provides large value added
- SEEA will soon be standard



What next?

- Coordination, Coordination, Coordination:
 - ⇒ Between statisticians and scientists
 - ⇒ Between statisticians and policy makers
 - ⇒ Within the statistical community