

# System of Environmental Economic Accounting



System of  
Environmental  
Economic  
Accounting

# SEEA Energy

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# SEEA: SOME DETAILS

# Good measurement for good management



- Sustainable management of the environment contributes to social and economic development
- **Accounting** for the environment means nature can be **managed** as a valuable asset and **reflected in policy**

# Statistics for sustainable development

## Sustainable Development Policy

Evidence Based

Integrated

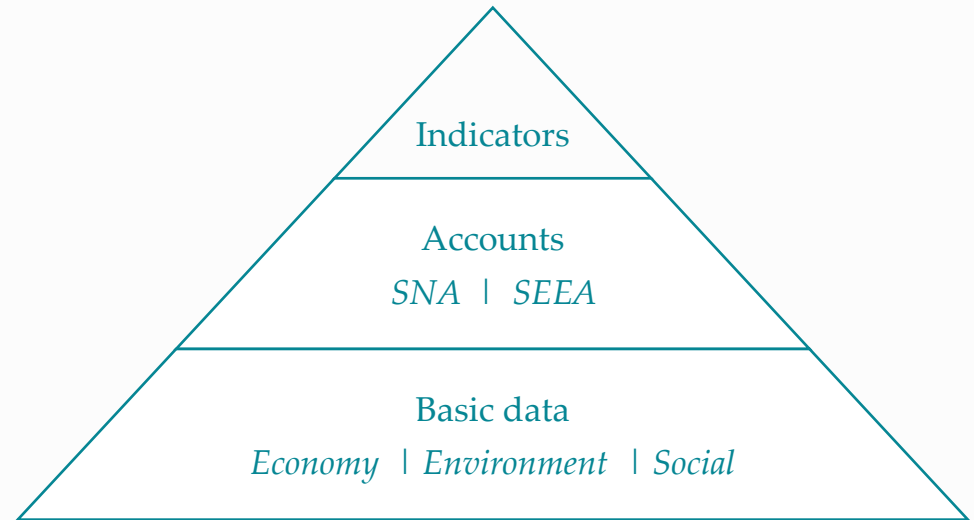
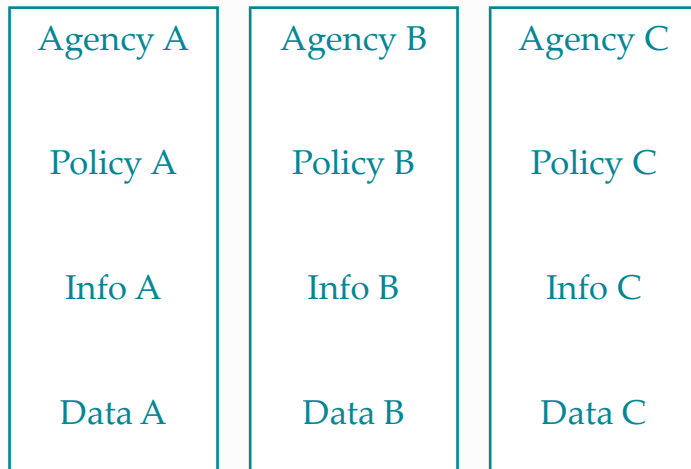
## Integrated Information System

Applies a uniform  
standard approach

Integrates  
environmental,  
economic and social  
information

Captures synergies and  
trade-offs

# Silo approach → Integrated statistics



## Accounts to integrate statistics:

- Address institutional arrangements
- Integrate statistical production process and services
- Ensure consistency between basic data, accounts and indicators

# International statistical standard

- The **SEEA Central Framework** was adopted as an international statistical standard by the UN Statistical Commission in 2012
- The **SEEA Experimental Ecosystem Accounting** complements the Central Framework and represents international efforts toward coherent ecosystem accounting
- The **SEEA Energy** is fully consistent with SEEA Central Framework and provides further details on the energy accounts.



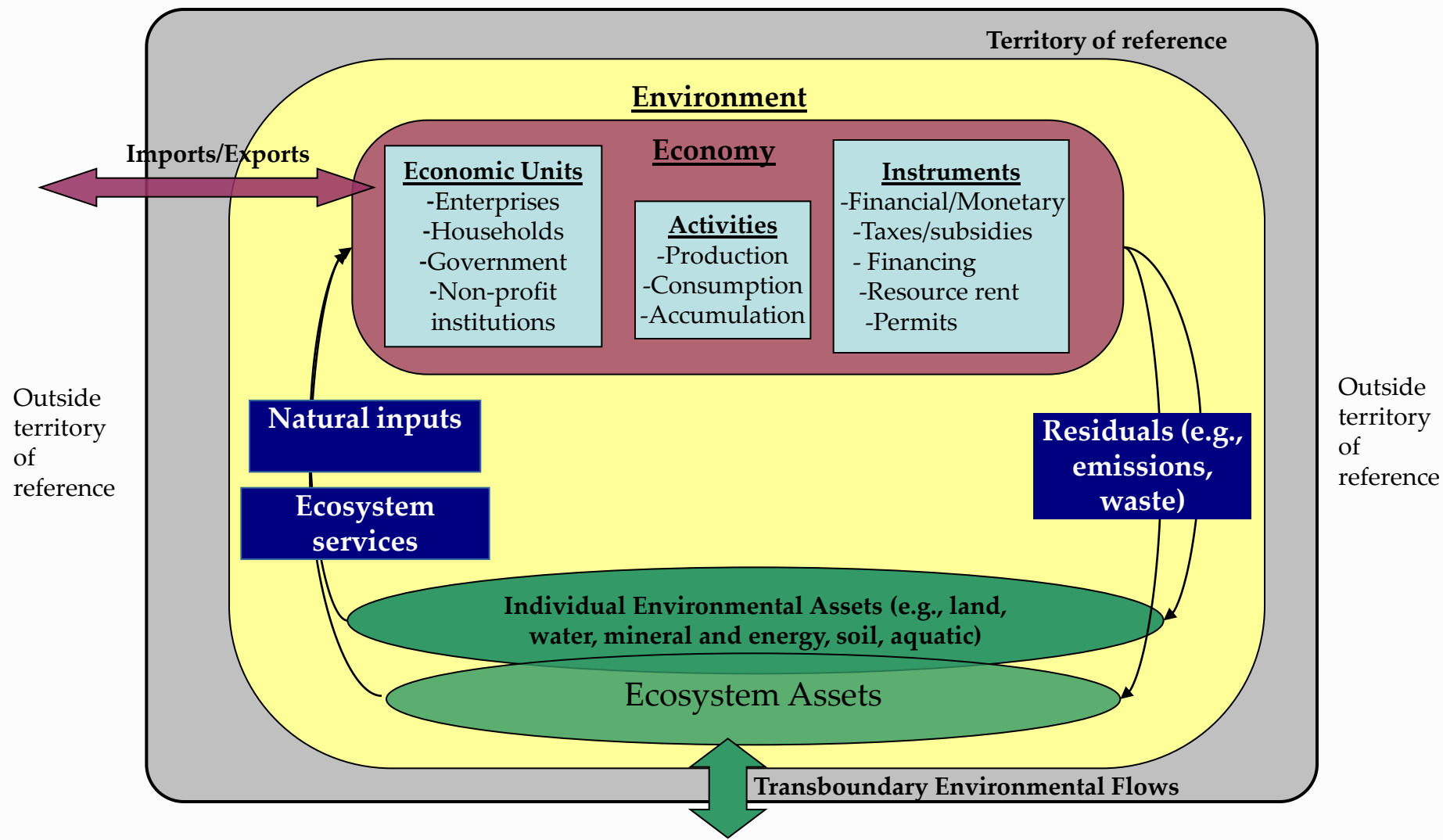
# What is the SEEA?

SEEA is the international statistical standard for measuring the relationship between the environment and the economy.

- Two perspectives: individual environmental assets (Central Framework) and ecosystems (Experimental Ecosystem Accounting)
- Stocks and flows
- Coherent and internally consistent
- Integrated/Linked to SNA
- Comprehensive
- Time series measuring same concept over time
- Apply to both physical and monetary based data



# SEEA Conceptual Framework



# What is the SEEA-Energy?

- Agreed concepts, definitions, classifications, tables and accounts related to energy supply and use and stocks of energy resources
- Builds upon energy statistics
- Closely related to energy balances
- Three main types of information on energy
  - The supply and use of energy (flows)
  - The stocks of energy and the changes in them
  - Other economic aspects related to energy

# Supply and use

SUPPLY TABLE						
	Industries	Households	Accumulation	Rest of the World	Environment	Totals
<b>Energy from natural inputs</b>					Energy inputs from the environment	Total supply of energy from natural inputs
<b>Energy products</b>	Output			Imports		Total supply of energy products
<b>Energy Residuals</b>	Energy residuals generated by industry	Energy residuals generated by household consumption	Energy residuals from accumulation	Energy residuals received from the rest of the world	Energy residuals recovered from the environment	Total supply of energy residuals
USE TABLE						
	Industries	Households	Accumulation	Rest of the World	Environment	Totals
<b>Energy from natural inputs</b>	Extraction of energy from natural inputs					Total use of energy from natural inputs
<b>Energy products</b>	Intermediate consumption	Household consumption	Changes in inventories	Exports		Total use of energy products
<b>Energy residuals</b>	Collection & treatment of energy residuals		Accumulation of energy residuals	Energy residuals sent to the rest of the world	Energy residual flows direct to environment	Total use of energy residuals

# Stocks

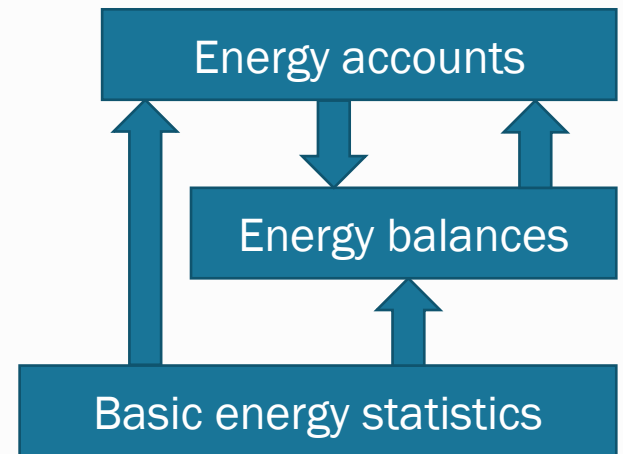
<b>Opening stock of resources</b>		
<b>Additions to stock of resources</b>		
	Growth in stock	
	Discoveries of new stock	
	Upwards reappraisals	
	Reclassifications	
	<i>Total additions to stock</i>	
<b>Reductions in stock of resources</b>		
	Extractions	
	Normal loss of stock	
	Catastrophic loss	
	Downwards reappraisals	
	Reclassifications	
	<i>Total reductions in stock</i>	
<b>Revaluation of the stock of resources *</b>		
<b>Closing stock of resources</b>		

\* Only applicable for asset accounts in monetary terms

# LINK WITH ENERGY STATISTICS AND BALANCES

# The link with energy accounts

- The main purpose of the energy accounts is to provide a comprehensive description of the flows of energy, which is consistent with the system of national accounts
- Basic energy statistics and energy balances are the starting point
- Many of the flows described in the basic energy statistics and the energy balances are the same as in the energy accounts
- Some crucial differences also exist between accounts and balances
  - > Differences in terminology and concepts
  - > Conceptual differences territory principle / residence principle
  - > Treatment of transport



# Differences in terminology

- In the energy balance, the supply is defined as:

**Total energy supply =**

- + Primary energy production
  - + Import of primary and secondary energy
  - Export of primary and secondary energy
  - International (aviation and marine) bunkers
  - Stock changes
- In the energy accounts the supply is defined as output+imports
  - In the energy accounts *intermediate consumption, households final consumption, exports, international bunkers and stock changes* are considered uses
  - In the energy balance, *final consumption* refers to the use of fuels, electricity and heat delivered to final consumers being it industries or households. In the energy accounts, *final consumption* refers to the households use of energy only
  - Stocks and changes in stocks defined in the energy balances are referred to as inventories and changes in inventories defined in the energy accounts

# From energy balances to energy accounts

- Adjustments to the resident principle
  - > Energy use by residents abroad
  - > Energy use by non-residents on the territory
- Breakdown by ISIC industries
  - > The primary production of energy and use of energy in the energy balance needs to be broken down by ISIC industries in the energy accounts supply table
  - > Reallocation of transport activities

	Residents	Non-residents	
National territory	Sold on territory to resident units	Sold on territory to non-residents (foreign, tourists, transport companies, embassies)	Energy statistics and balances
Rest of the World	Sold to residents operating abroad (tourists, transport companies, etc.)		
	SEEA-Energy		



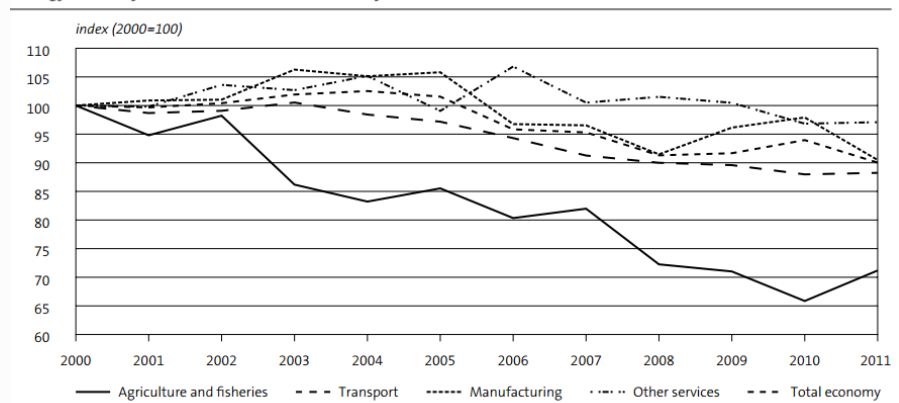
# Comparison of Energy Statistics, Energy Balances and Energy Accounts

<b>Energy Statistics</b>	<b>Energy Balances</b>	<b>Energy Accounts</b>
Based on primary statistics (production, foreign trade, business survey)	Based on energy statistics	Based on energy statistics and balances
Specific energy surveys	Supply and use balances	Supply and use balances
No specific format	Various formats (IEA, Eurostat, UN)	Uses national accounts SUT format
	Sectors and industries (ISIC)	Industries classified by ISIC
	Rearrangement of industries' energy use according to purpose (transport, auto-producers and heat for sale)	No re-arrangement of industries' energy use
	Detailed description of energy sector including technologies	Energy "sector" described by ISIC No description of technologies
	All transport in one separate sector	Own account transportation included in industries' activities
Territory principle	Territory principle	Resident principle
	Statistical differences	No statistical differences
Physical	Physical	Physical and monetary

# Added value of energy accounts

- Combined presentation of monetary and physical flows
  - > Efficiency/productivity indicators (also part of the SDGs)
  - > Decoupling of energy use from economic output and/or emissions to air
- Depletion adjusted measures
- Allows for seamless linking with other financial information such as taxes and subsidies to provide a more complete picture
- Important input in the calculation air emission accounts

Energy intensity of industries and the economy, corrected for weather influences





**THANK YOU**

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