SEEA: The International Standard for Environmental-Economic Accounting

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Background and Context to the System of Environmental-Economic Accounting (SEEA)

What is the SEEA?

- Organising framework for information on
  - Interactions between environment and economy
  - Stocks and changes in the stocks of environmental assets
- Uses an accounting approach to be both comprehensive and internally consistent
- Structures information in monetary and physical terms
- Multi-disciplinary framework
  - Economists meet Scientists meet Statisticians

Rationale for Environmental and Economic Accounts

- Incompleteness of current economic accounts
  - Don't incorporate many flows between economy and the environment or flows in physical terms
  - Do not account effectively for the cost of the use of natural resources
  - No clear or common definition of environmental activity
- Links to information required for assessing sustainability
- Emerging view of accounting for the environment from a broad ecosystem perspective but needs to be linked to human interactions
- Belief in the power of accounting frameworks

- "If you don't measure it, you can't manage it"

Demand for SEEA: Four quadrants of sustainability

I Improving access to services and resources

- ✓ **Current & capital costs associated with services and their financing**
- ✓ **Losses in distribution**
- ✓ **Quantity of resource used**

Managing supply and demand **II**

- ✓ **Resource efficiency**
- ✓ **Decoupling for emissions and resource use**
- ✓ **Carbon and energy embedded in products**
- ✓ **Environmental goods and services**
- ✓ **Green jobs**
- ✓ **Environmentally-adjusted aggregates for depletion**
- ✓ **Resource rent**
- ✓ **Investment in infrastructure**

Sustainability

- ✓ **Stocks of natural resources**
- ✓ **Emissions to water, air and soil and waste generation**
- ✓ **Environmental protection expenditures and resource management**
- ✓ **Land use and land cover**
- ✓ **Conditions and health of ecosystems**
- ✓ **Ecosystem regulatory services**
- ✓ **Economic instruments to reduce impacts**

III Improving the state of environment and reducing impacts

- ✓ **Greenhouse gas emissions by economic activity**
- ✓ **Expenditures on mitigation (e.g. technologies)**
- ✓ **Expenditures on adaptation (e.g. dykes, etc.)**

Mitigating risks and adapting to extreme events **IV**

Demand for indicators

- Green Growth/Green Economy
- Beyond GDP
- SDI initiatives
- Sustainable Development Goals (SDGs)
- Well-being indicators/Measuring progress
- Wealth accounting
- Sustainability monitoring
- Biodiversity indicators
- Natural capital accounting
- Policy reporting and meeting international commitments (water, climate change, green jobs, biodiversity, etc.)

Many indicators commonly cited can be derived from SEEA based data sets

SEEA provides a coherent measurement framework across the various policy frameworks and targets ; i.e. single point of reference for multiple use

Ensures datasets are internationally comparable

SEEA's history

- 1993 – UN Handbook following 1992 Rio conference
- 2003 – Updated handbook (SEEA-2003) showing best practice theory and examples
- 2006 – Decision to revise and elevate SEEA to an international statistical standard
- 2012 – SEEA Central Framework
  - Adopted as an international standard in February 2012
  - Currently being finalised for publication

Related Work: SEEA Family

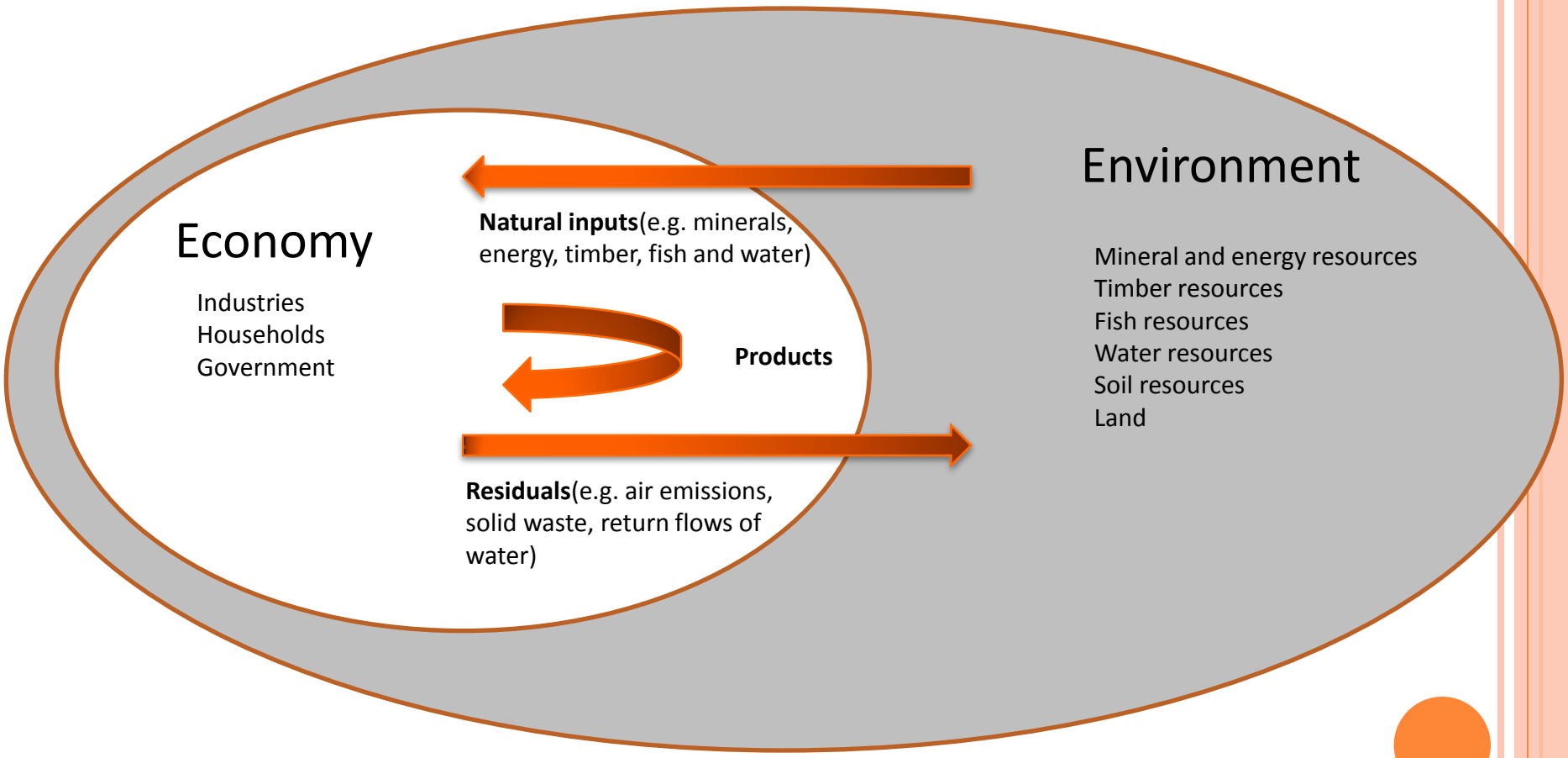
- SEEA – Water
- SEEA – Fisheries
- SEEA – Energy

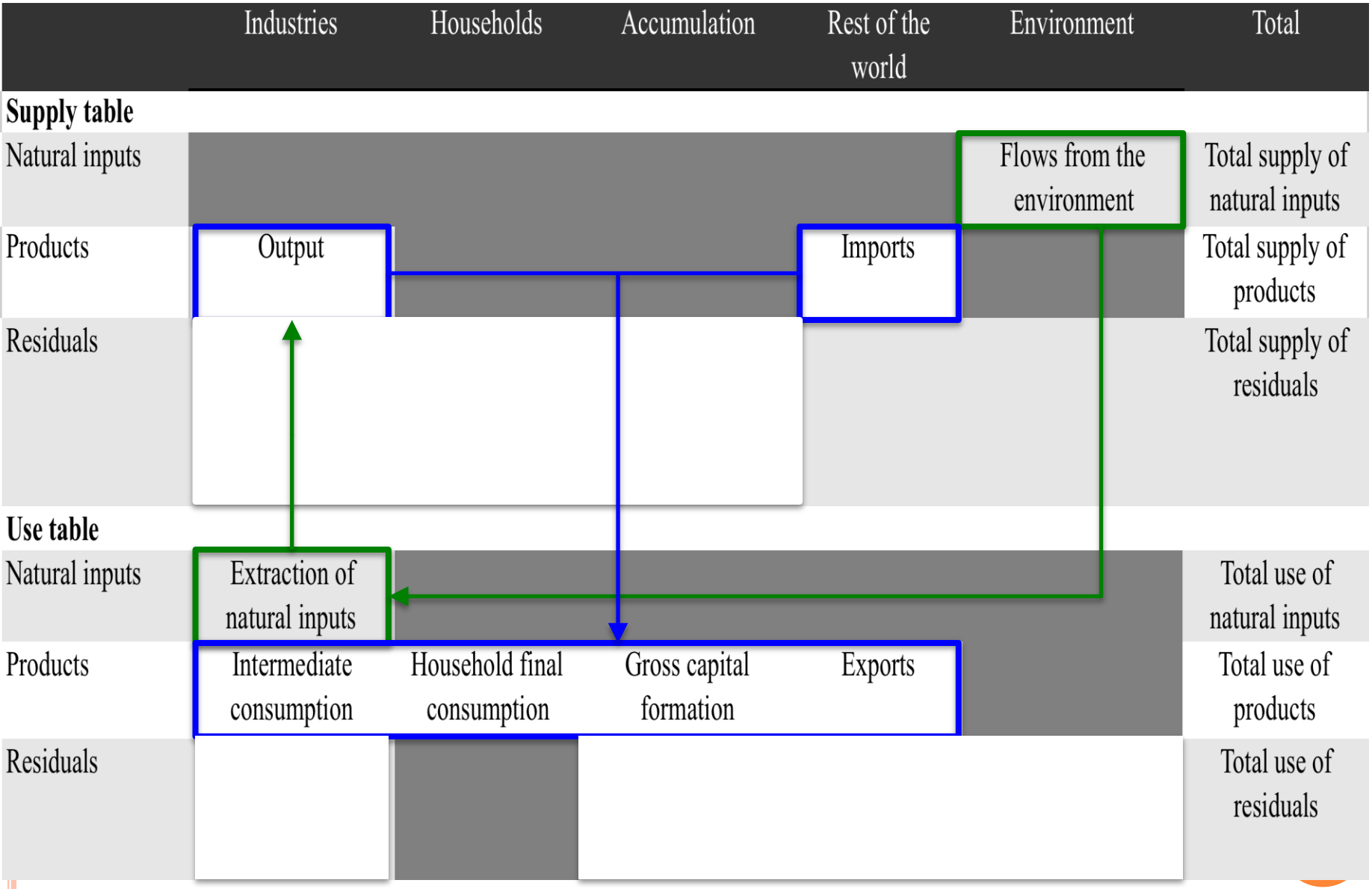
- SEEA – Experimental Ecosystem Accounting
- SEEA – Applications and Extensions

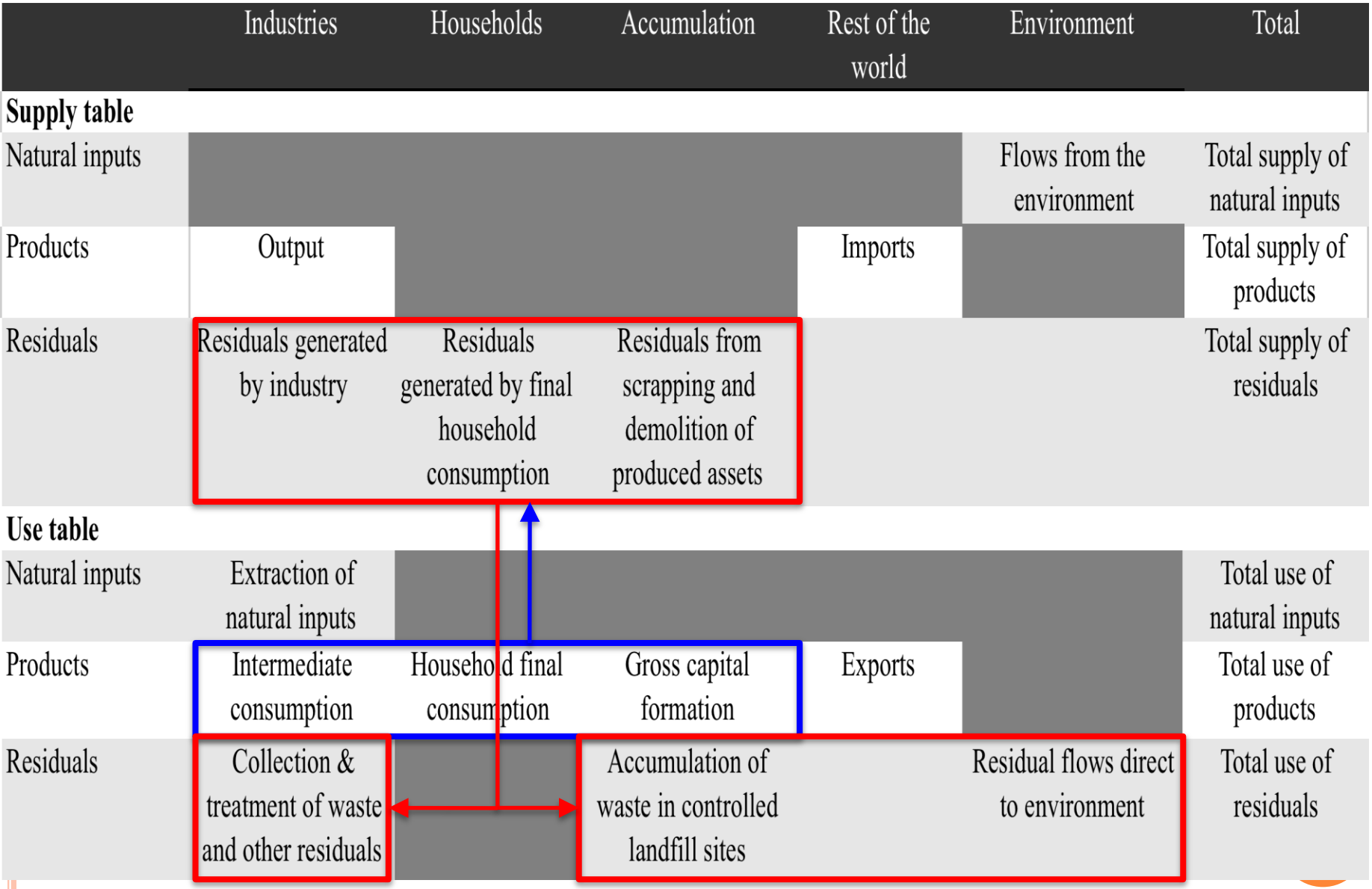
- For more information go to:
  - http://unstats.un.org/unsd/envaccounting/seea.asp

Key Themes & Areas of the SEEA

AREA 1: PHYSICAL FLOW ACCOUNTING




Industries
Households
Accumulation
Rest of the world
Environment
Total
Supply table
Natural inputs
Flows from the environment
Total supply of natural inputs
Products
Output
Imports
Total supply of products
Residuals
Total supply of residuals
Use table
Natural inputs
Extraction of natural inputs
Total use of natural inputs
Products
Intermediate consumption
Household final consumption
Gross capital formation
Exports
Total use of products
Residuals
Total use of residuals

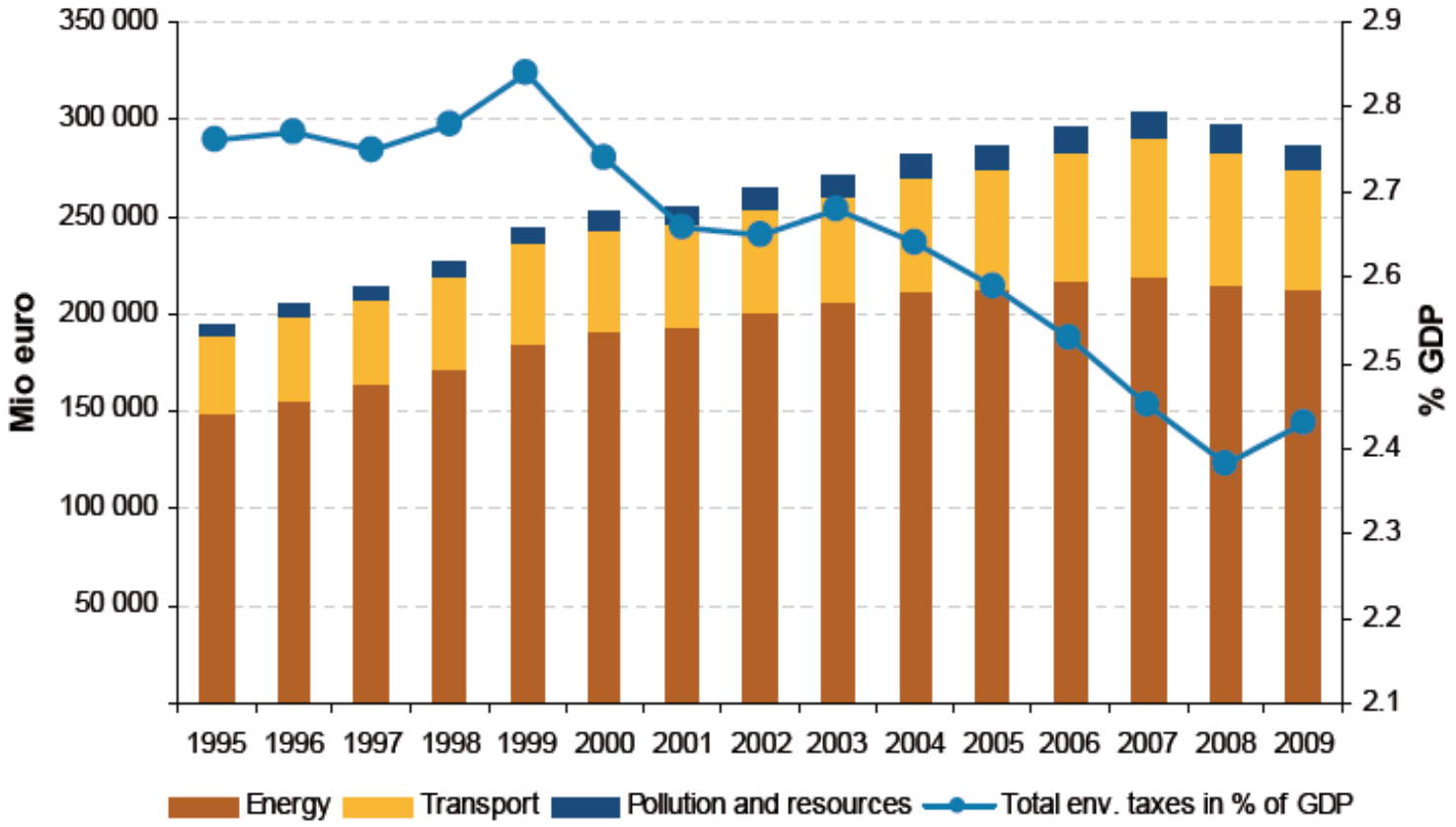

Industries
Households
Accumulation
Rest of the world
Environment
Total
Supply table
Natural inputs
Flows from the environment
Total supply of natural inputs
Products
Output
Imports
Total supply of products
Residuals
Residuals generated by industry
Residuals generated by final household consumption
Residuals from scrapping and demolition of produced assets
Total supply of residuals
Use table
Natural inputs
Extraction of natural inputs
Total use of natural inputs
Products
Intermediate consumption
Household final consumption
Gross capital formation
Exports
Total use of products
Residuals
Collection & treatment of waste and other residuals
Accumulation of waste in controlled landfill sites
Residual flows direct to environment
Total use of residuals

Area 2: Environmentally Related Economic Transactions

- SEEA Central Framework describes those flows within the standard economic accounts that may be considered environmentally related.
- Aspects covered include:
  - Environmental protection and resource management activity and expenditure
    - Connected and specific products
    - Adapted goods
    - Financing of environmental activity
  - Environmental goods and services sector (EGSS)
  - Classification of environmental activities
  - Environmental taxes and subsidies
  - Permits for use of the environment (e.g. emission permits)

Example: Environmental Tax revenue by type of tax

Figure 1: Environmental tax revenue by type, EU-27, 1995 – 2009 (EUR and % GDP)



Source: Eurostat (online data code : env_ac_tax)

Area 3: Accounting for Environmental Assets

- Environmental assets: "Naturally occurring living and non-living components of the Earth, together comprising the bio-physical environment, that may provide benefits to humanity" (SEEA Central Framework 2.17)

- Central Framework focus on individual components / resources
  - Mineral & energy resources, land, soil resources, timber resources, aquatic resources (incl. fish), water resources
  - Include both natural and cultivated resources

Asset Accounts

Opening stock of environmental assets			
Additions to stock			
	Growth in stock		
	Discoveries of new stock		
	Upward reappraisals		
	Reclassifications		
	Total additions of stock		
Reductions of stock			
	Extractions		
	Normal loss of stock		
	Catastrophic losses		
	Downward reappraisals		
	Reclassifications		
	Total reductions in stock		
Revaluation of the stock*			
Closing stock of environmental assets			

Depletion

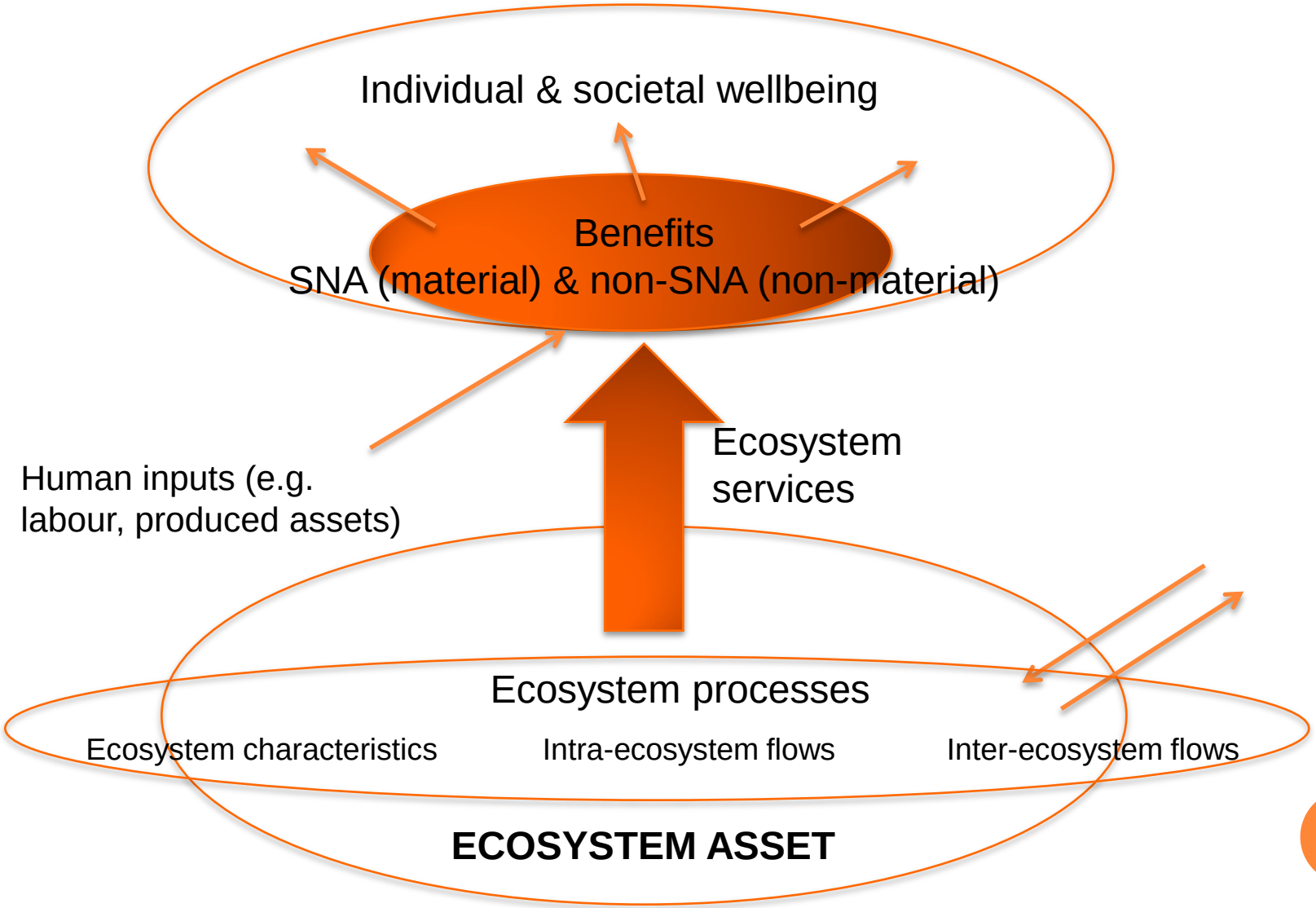
- Depletion: Decrease in the quantity of the stock of a natural resource due to extraction by economic units at a level greater than regeneration
  - Depletion of non-renewables (mineral & energy res.)
  - Depletion of renewables (timber, aquatic resources)

- Adjusted measures of economic aggregates (GDP, national income, saving, etc.)

Area 4: Experimental Ecosystem accounting

- Ecosystem accounting considers the relationship between the economy and the environment by accounting for changes in specific areas within a country.
- Generally target generic ecosystem types such as agricultural areas, forests, deserts, wetlands, marine areas, etc.
- Measurement approaches are developing but there are significant challenges (hence experimental)
- Emerging as a key area of information demand because it allows assessment of the impact of economic activity on the environment
- Important links to accounting for carbon and biodiversity

Linking Ecosystem assets and Wellbeing



Key Messages

#1: Benefits of using an Accounting Approach

- Accounting is founded on defined relationships between stocks and flows
- Accounting provides
  - Broad coverage related to defined set of components (i.e. applies broad measurement boundaries)
  - Comprehensive (not selective) measurement within boundaries
  - Integrated and coherent relationships between stocks and flows (in both physical and monetary terms)
  - Measurement of concepts as distinct from reporting statistics – thus provides a basis for organising information
  - Potential for aggregation and consistent time series
  - Basis for reconciling data and identifying data gaps

#2: Integrated Approach

- SEEA provides an integrated approach to information that is required for integrated decision making.
- Integration occurs at a number of levels
  - Integration of economic and environmental data
  - Integration of data in monetary and physical terms through use of same measurement boundaries and classifications
  - Coverage of industry, households, governments and the rest of the world in the same framework
  - Common basis for international comparison

#3: Flexible Implementation

- There are many aspects of the relationship between the economy and the environment, not all need to be answered at one time.
- Adapt implementation of SEEA to country circumstance and policy requirements
- SEEA can be implemented by focusing on key areas and themes (e.g. water, energy, environmental protection expenditure, fisheries)
- Institutional co-ordination and collaboration is essential

Questions?

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THANK YOU