



Overview of the SEEA; SEEA tables and accounts

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United Nations Statistics Division

Regional Seminar on Developing an Implementation Strategy for the
SEEA Central Framework and Supporting Statistics

12-14 December 2013

Kampala, Uganda



Policy settings

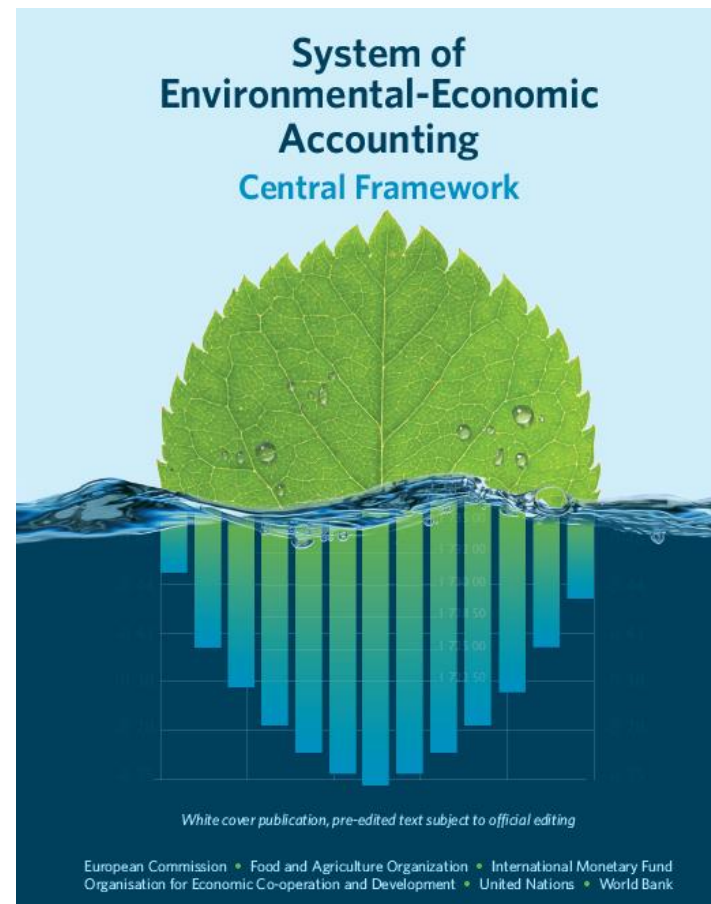
- Post-2015 UN development agenda/SDGs
- Green Growth/Green Economy
- Broader measures of progress/Beyond GDP
- Natural Capital Accounting/ WAVES
- Aichi targets (e.g. Target 2)
- Poverty and environment
- TEEB





SEEA

- Internationally agreed statistical framework to measure environment and its interactions with economy
- Adopted as international statistical standard by UN Statistical Commission in 2012
- Developed through inter-governmental process
- Published by UN, EU, FAO, IMF, OECD, WB





SEEA: A Statistical Standard

- Countries are “encouraged to implement the standard”
- International organizations have obligations to assist countries in implementation
- Implementation strategy adopted by Statistical Commission in March 2013
- Data reporting mechanism will be established



The Suite of SEEAs

- 1993** Handbook – interim publication
- 2003** Updated SEEA handbook – manual of best practices
- 2006** UNSC decided to elevate SEEA to an international standard

- 2012** **SEEA – The Central Framework (international standard)**
- 2013** **SEEA – Experimental Ecosystem Accounting**
- 2013** **SEEA – Applications and Extensions**

Subsystems:

- SEEA – Water (adopted in 2007)
- SEEA – Energy
- SEEA – Agriculture



Information is vital ...and it needs to be integrated

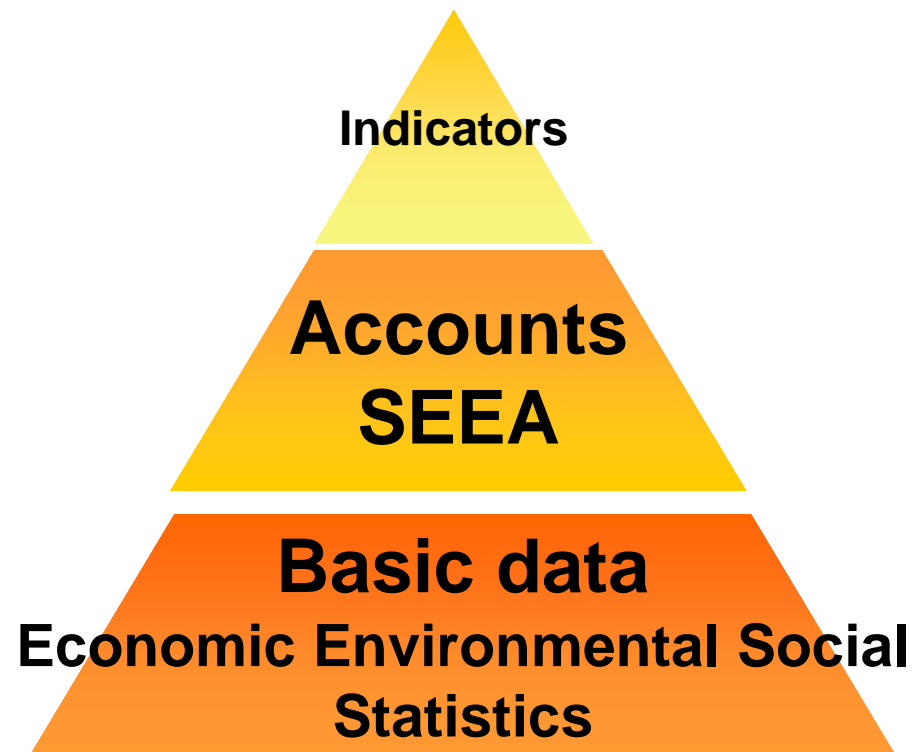
- The economy impacts on the environment and the environment impacts on the economy
- To understand these linkages we need to integrate environmental and economic information
- This is the explicit purpose of the SEEA





Integrated statistics

- Linking policy needs and statistics
- Understanding the institutional arrangements
- Integrated statistical production process/chain and services
- Consistency between basic data, accounts and tables and indicators





Problem: Information silos

- Data 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





Solution: Integrated information

- Holistic picture
- Consistency of information and identification of data gaps
- Interconnections between economy, environment and society



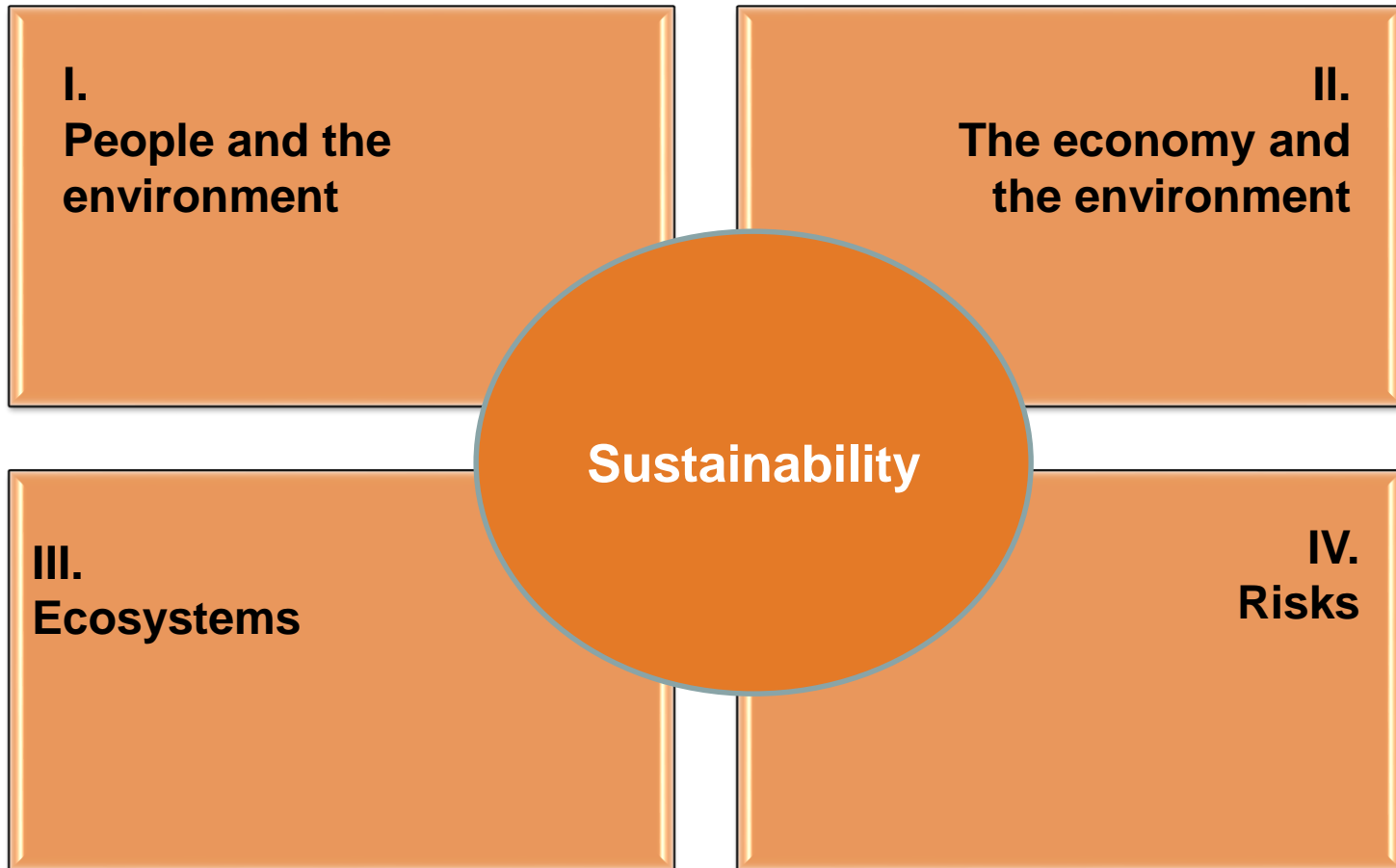


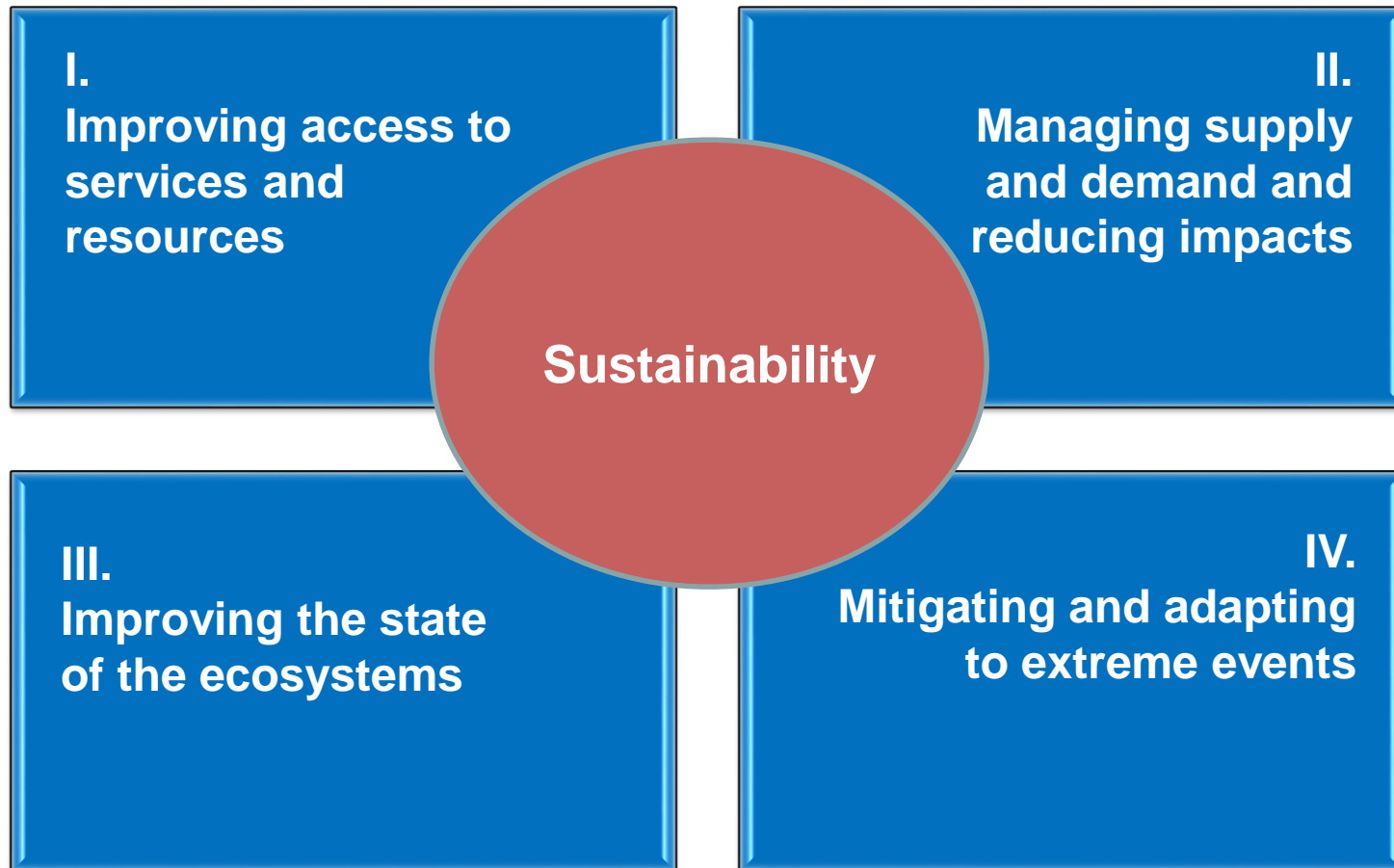
Linking environmental and socio-economic data is essential for policymakers

- Enables analysis of the impact of economic policies on the environment and vice versa
- Provides a quantitative basis for policy design
- Identifies the socio-economic drivers, pressures, impacts and responses affecting the environment
- Supports greater precision for environmental regulations and resource management strategies
- Provides indicators that express the relationships between the environment and the economy
- Support relevant perspectives on the dimensions of economic development, environmental sustainability and social equity



The SEEA Policy Quadrants







Quadrant I: Improving access

I. Improving access to services and resources

Key information in this quadrant (household sector related):

- Costs associated with the provision of services to households
- Investments in network infrastructure
- Employment and compensation in household production units
- Household consumption and disposable income
- Poverty and inequality



Quadrant II: The economy and the environment

II. Managing supply and demand

Key information in this quadrant:

- Efficiency of production
 - Decoupling
 - Multifactor productivity
- Efficiency of consumption
 - Embedded emissions
 - Footprint indicators
- Costs of production and payments by users (e.g. fees, taxes, rents, permits, etc.)
- Employment and compensation
- Financing (who pays for investments and current costs)
- Depletion estimates
- Solid waste and emissions
- Environmental protection and resource management expenditures



Quadrant III: Ecosystems

III. Improving the state of the ecosystems

Key information in this quadrant:

- Ecosystem extent
- Ecosystem conditions
 - Water cycle
 - Carbon cycle
 - Nutrient cycle
 - Primary productivity
- Biodiversity
- Regulatory services provided by ecosystems



Quadrant IV: Extreme Events

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

Key information in this quadrant:

- Natural disasters
- Investments for mitigation
- Investments for adaptation

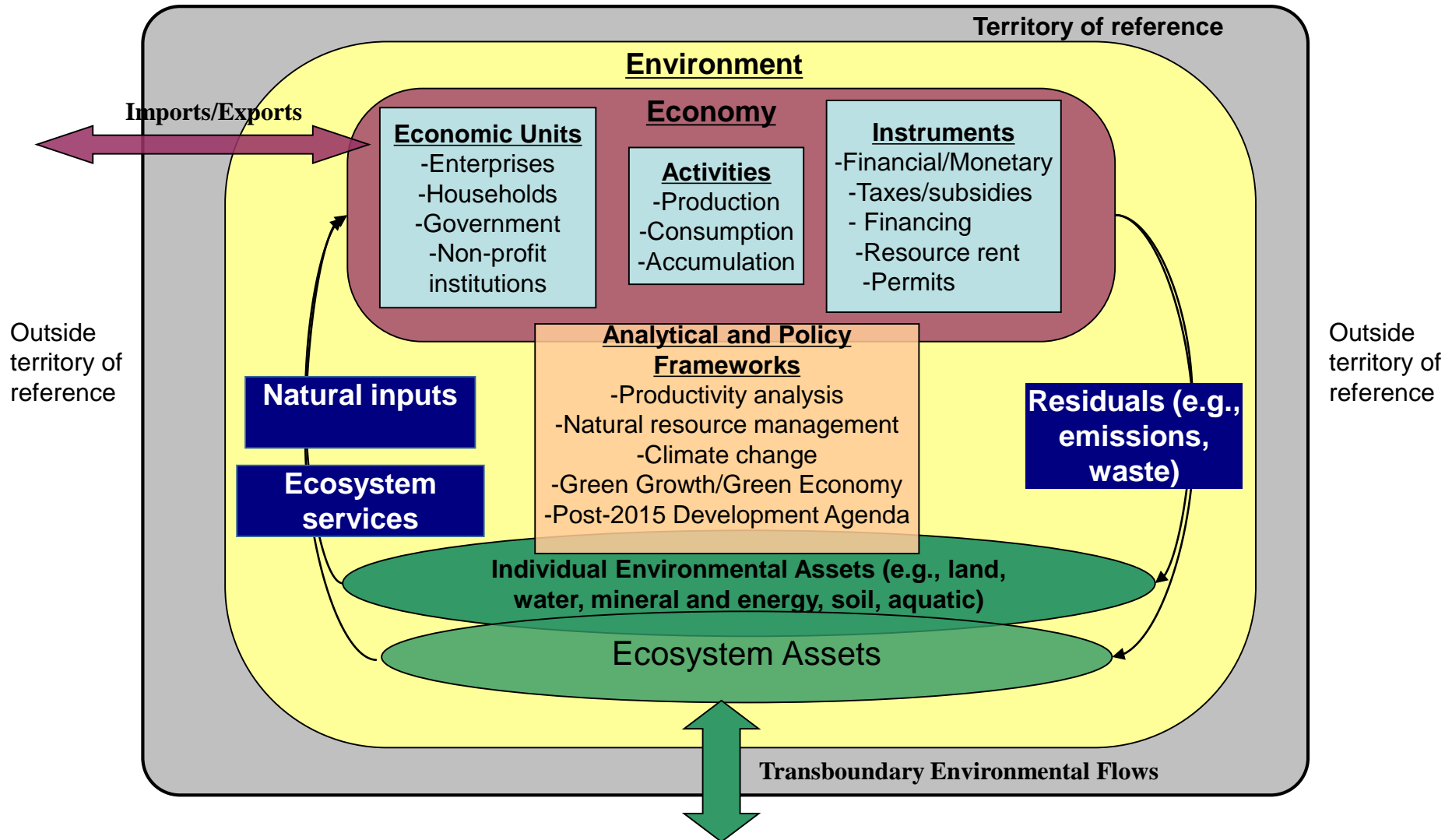


The SEEA Central Framework Accounts

- 1. Flow accounts:** supply and use tables for products, natural inputs and residuals (e.g. waste, wastewater) generated by economic activities.
 - physical (e.g. m² of water) and/or monetary values (e.g. permits to access water, cost of wastewater treatment, etc.)
- 2. Stock accounts** for environmental assets: natural resources and land
 - physical (e.g. fish stocks and changes in stocks) and/or monetary values (e.g. value of natural capital, depletion)
- 3. Activity / purpose accounts** that explicitly identify environmental transactions already existing in the SNA.
 - e.g. Environmental Protection Expenditure (EPE) accounts, environmental taxes and subsidies
- 4. Combined physical and monetary accounts** that bring together physical and monetary information for derivation indicators, including depletion adjusted aggregates



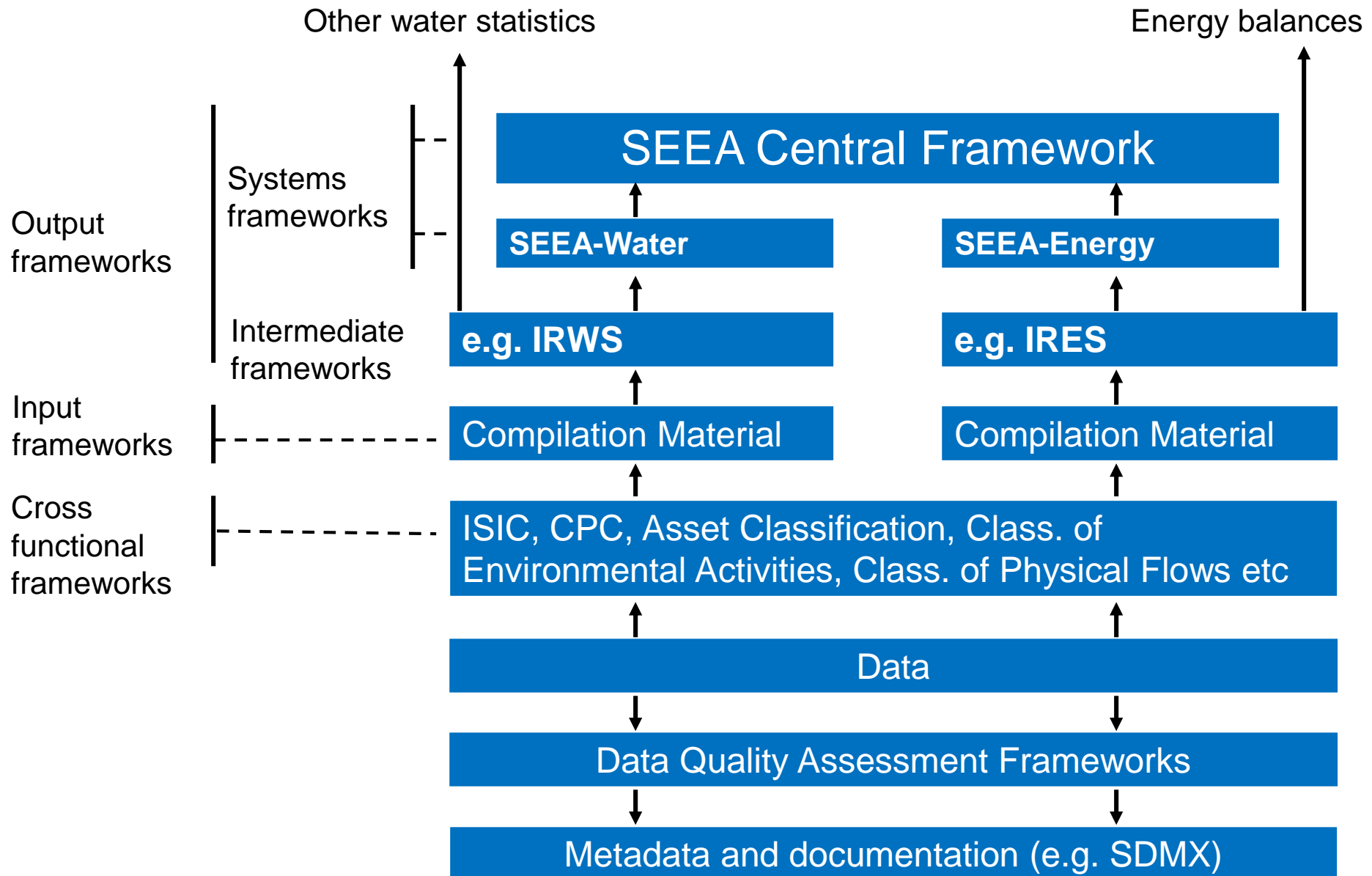
SEEA Conceptual Framework





System of Environmental-Economic Accounting

United Nations Statistics Division





SEEA Experimental Ecosystem Accounting

- Complements SEEA Central Framework
- Integrated statistical framework for accounting for ecosystem assets and associated services
- Important first step in development of statistical framework for ecosystem accounting



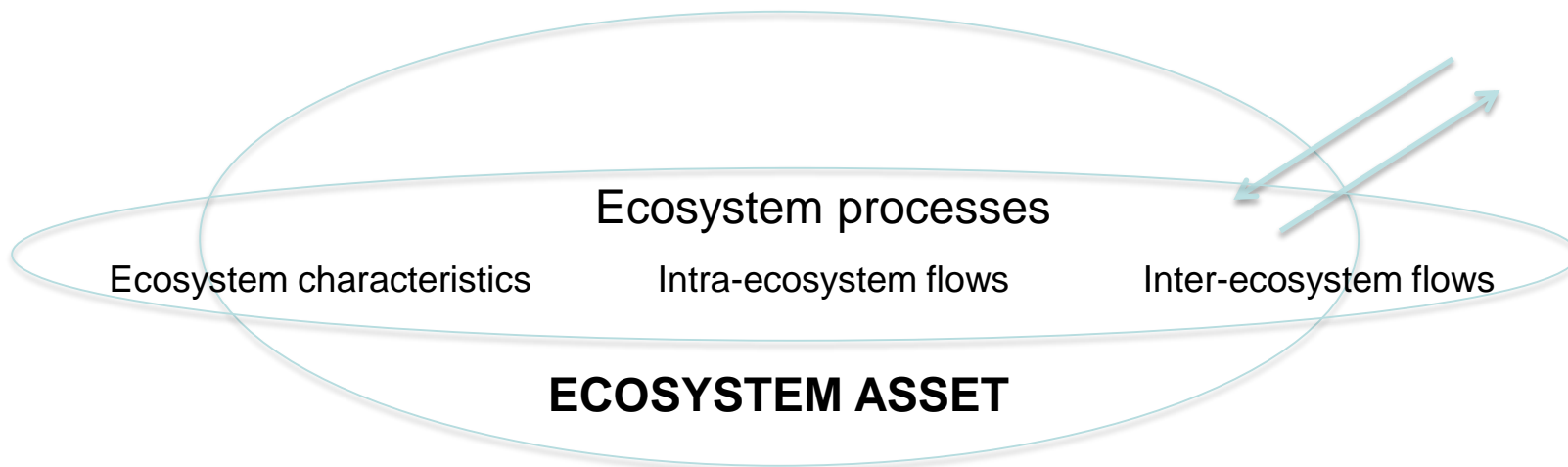


SEEA Experimental Ecosystem Accounting

- Focus on monitoring environmental impact rather than environmental pressures
- Determine appropriate areas – ecosystem assets
- Find indicators of condition (e.g. carbon balances, water flows, biodiversity) and assess change over time
- Find indicators of ecosystem services
 - Provisioning, regulating, cultural
- Examine relationship between flows of ecosystem services and changing condition (essentially analysis in volume terms)

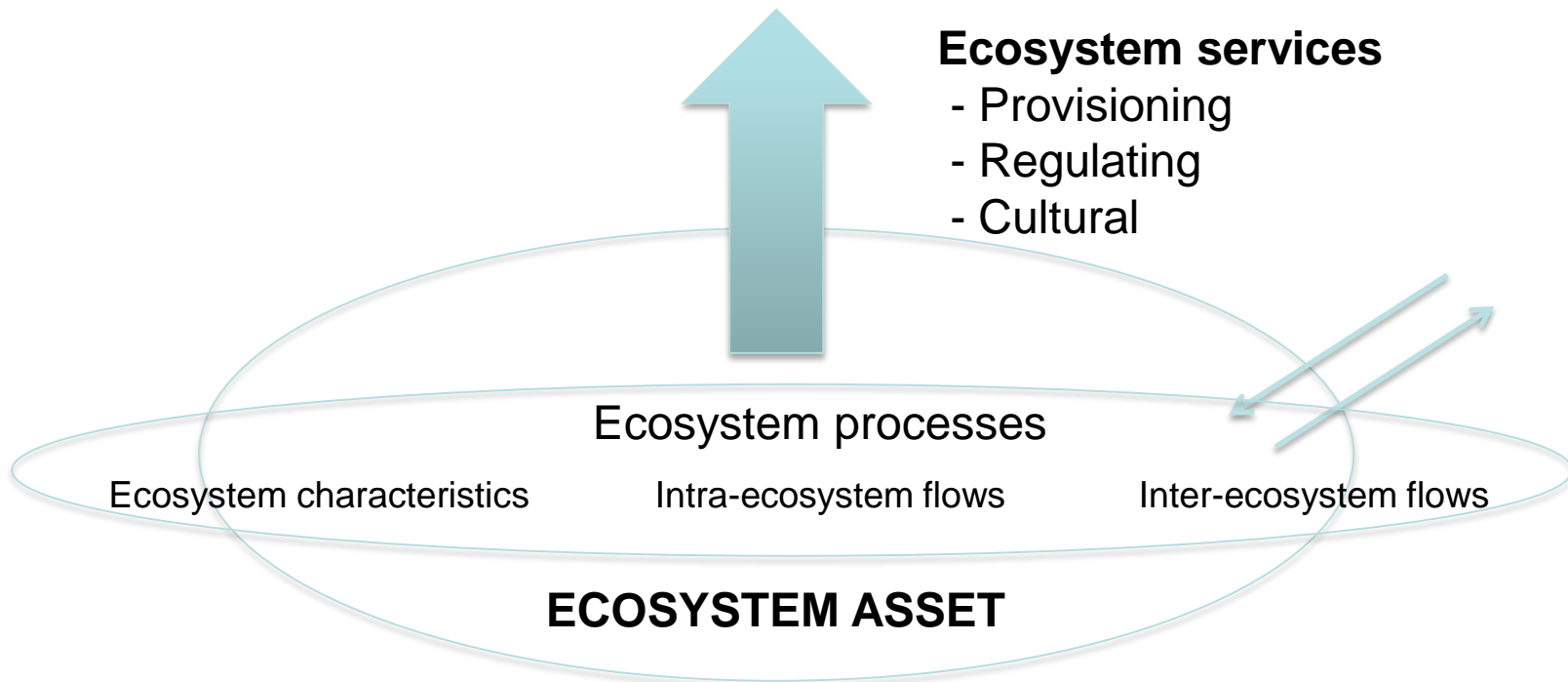


Core SEEA Ecosystem Accounting Model



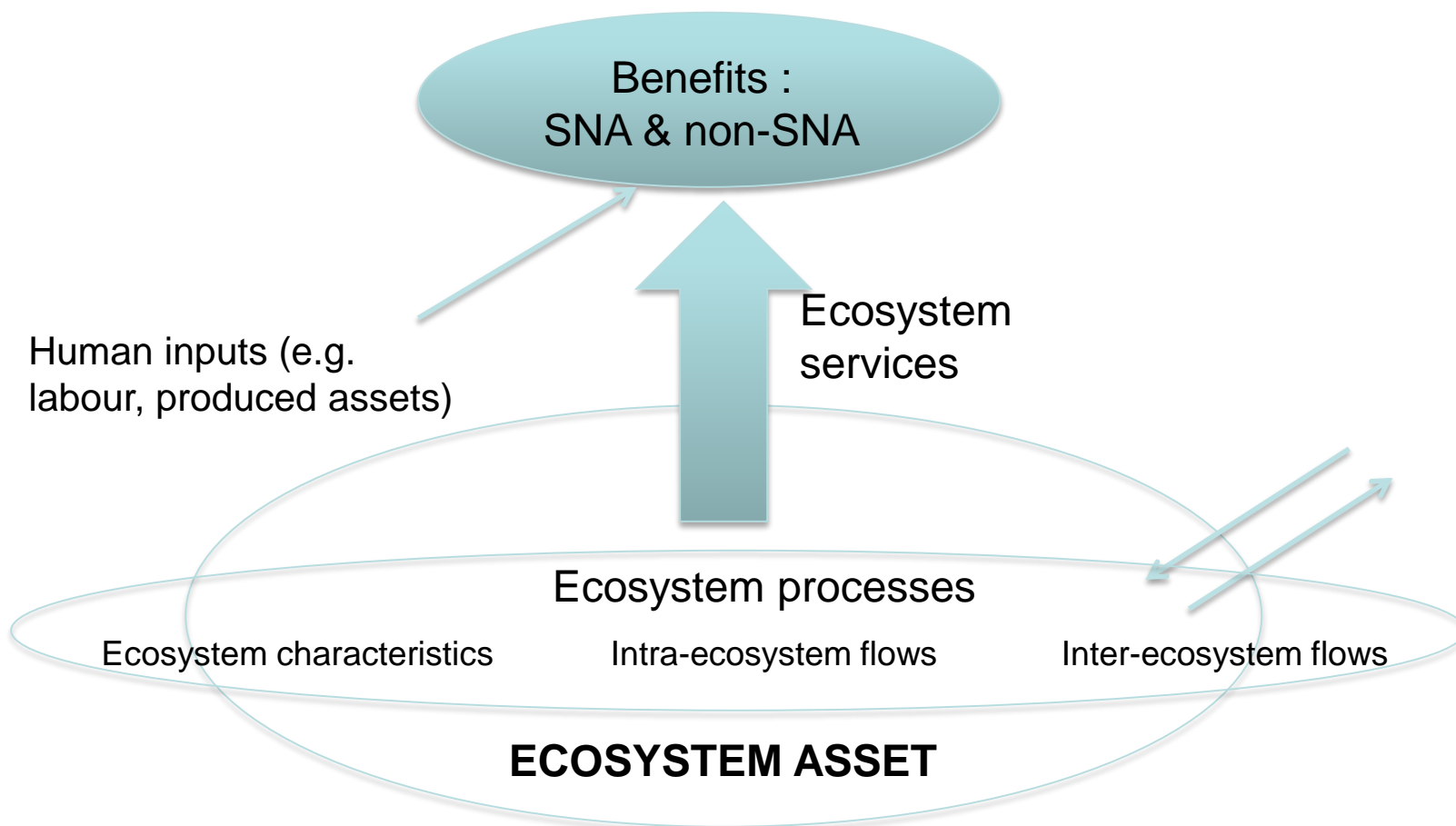


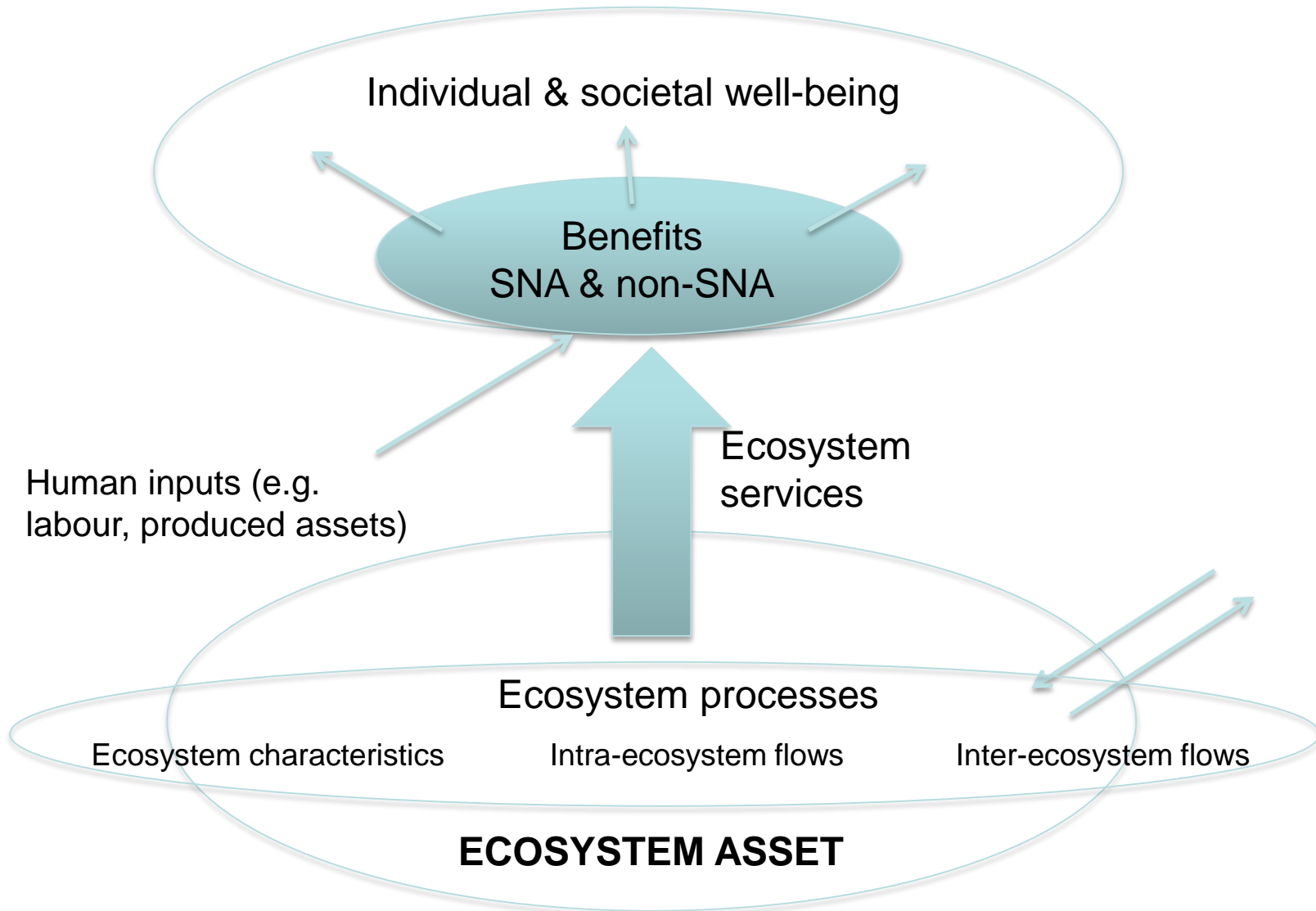
Core SEEA Ecosystem Accounting Model





Core SEEA Ecosystem Accounting Model







Ecosystem services

Ecosystem services are services that benefit humanity, and can be of direct or indirect use. Broad examples include:

- Provisioning services (nutrition, medicine, fur, uncultivated food)
- Regulating services (climate regulation, flood control, water filtration, air filtration, de-pollution)
- Cultural services (science, spiritual, ceremonial, recreation, aesthetic)





SEEA Experimental Ecosystem Accounting

- UN Statistical Commission
 - Encouraged countries to test framework
 - Requested creation of mechanism to advance research agenda
 - 4 research streams:
 - Ecosystem conditions and services
 - Geospatial
 - Valuation
 - Policy applications



Reference Material

Briefing notes:

Briefing note on SEEA Central Framework:

<http://unstats.un.org/unsd/envaccounting/Brochure.pdf>

Briefing note on SEEA Experimental Ecosystem Accounting:

http://unstats.un.org/unsd/envaccounting/workshops/int_seminar/note.pdf

Briefing note on SEEA Water and International Recommendations for Water Statistics (IRWS)

http://unstats.un.org/unsd/envaccounting/WWAP_UNSD_WaterMF.pdf

Methodological publications:

SEEA Central Framework:

http://unstats.un.org/unsd/envaccounting/White_cover.pdf

SEEA Experimental Ecosystem Accounting:

<http://unstats.un.org/unsd/statcom/doc13/BG-SEEA-Ecosystem.pdf>

SEEA Applications and Extensions:

<http://unstats.un.org/unsd/statcom/doc13/BG-SEEA-AE.pdf>

Library – searchable library of publications (e.g. country case studies, methodological publications, etc.)

<http://unstats.un.org/unsd/envaccounting/ceea/archive/>

Research agenda accompanying SEEA-Experimental Ecosystem Accounting

<http://unstats.un.org/unsd/statcom/doc13/BG-SEEA-ResearchAgenda.pdf>

Contact E-mail: seea@un.org



SEEA tables and accounts



SEEA Tables and Accounts

- Stocks and flows
- Coherent and internally consistent
- Integrated and comprehensive
- Time series
- Apply to both physical and monetary data
- Links to SNA
 - Accounting principles
 - Consistent classification, definitions, measurement boundaries
 - Consistent aggregates, indicators
 - Mainstreaming



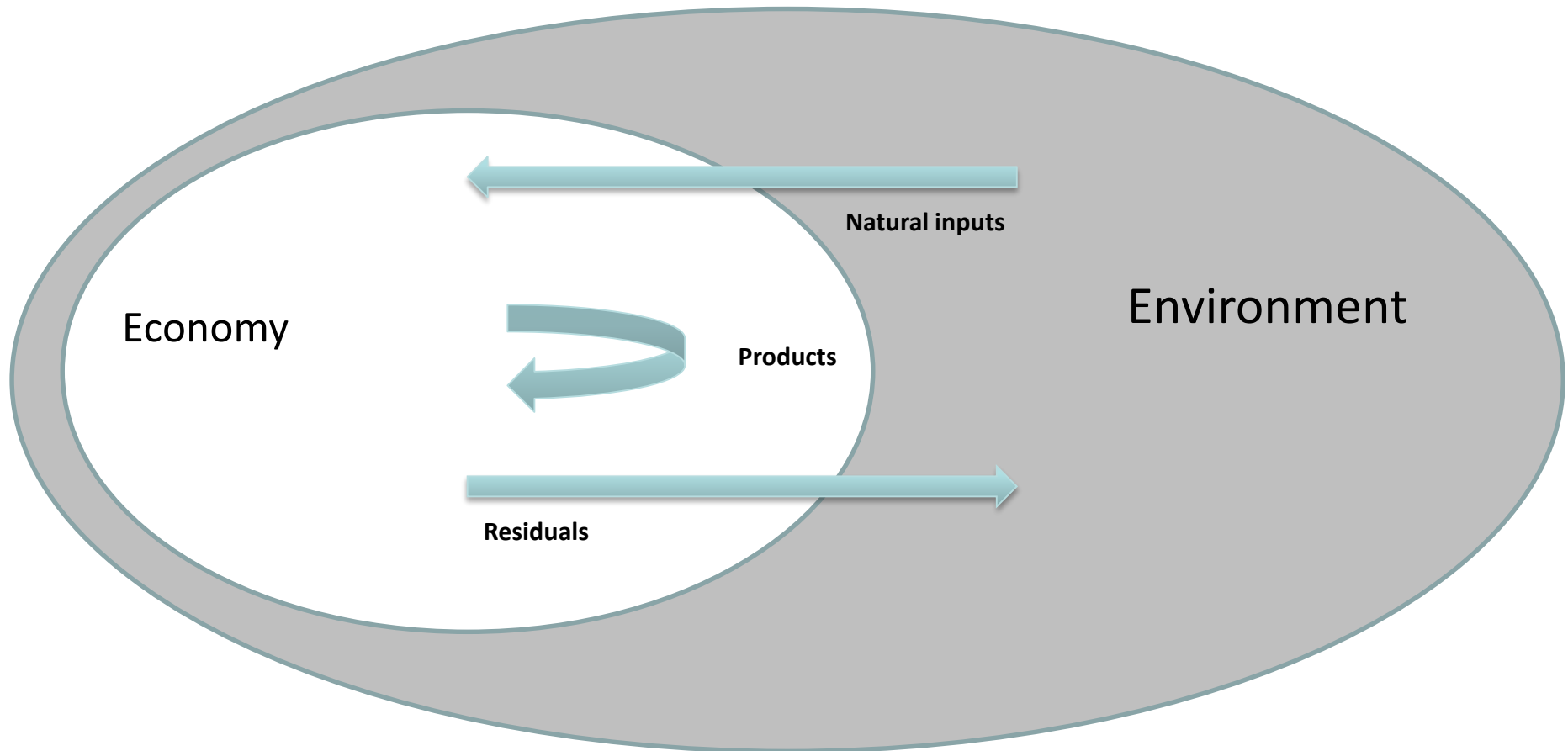
Types of accounts

- Physical flow accounting
 - Energy, water, emissions, waste
- Accounting for environmental activities
- Natural resource accounting
 - Stocks, natural growth, extraction and depletion
- Land accounting
 - Changes in land use and land cover
- Ecosystem accounting





THE ENVIRONMENT-ECONOMIC LINK

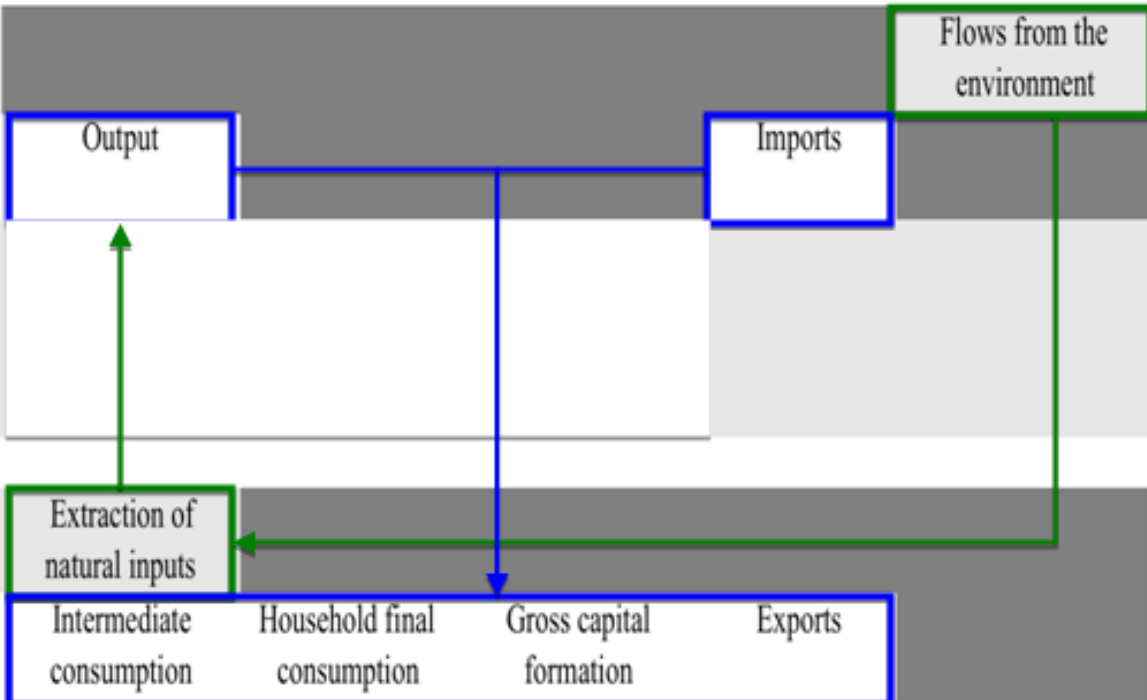




System of Environmental-Economic Accounting

United Nations Statistics Division

| | 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 |

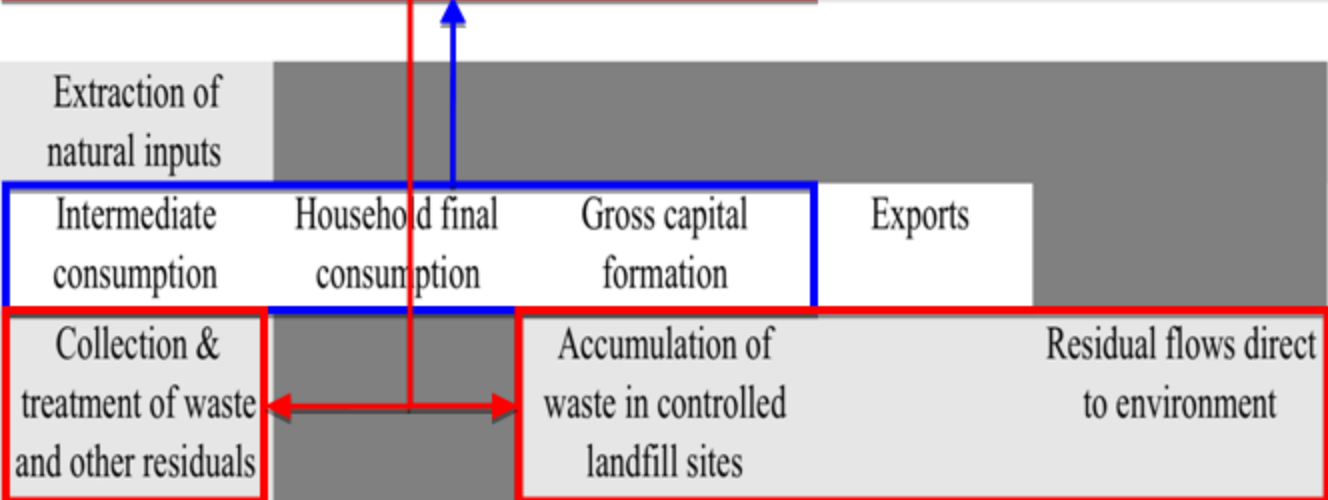
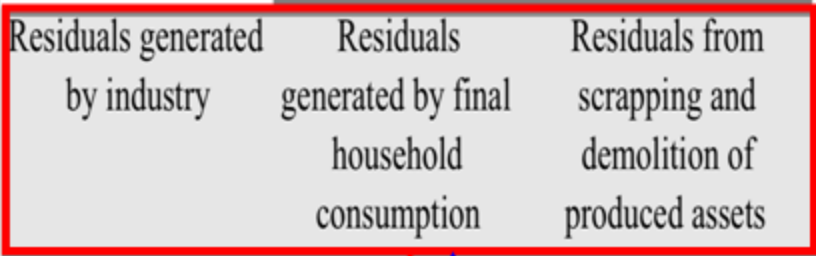




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| Supply table | | | | | | |
| Natural inputs | | | | | Flows from the environment | Total supply of natural inputs |
| Products | Output | | | Imports | | Total supply of products |
| Residuals | Residuals generated by industry | Residuals generated 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 |





Types of physical accounts

- Energy
- Water
- Air emissions (including GHG emissions)
- Solid waste
- Emissions to water
- Nutrients



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



Types of environmental asset accounts

- Mineral and energy resources
- Timber – natural and cultivated
- Aquatic – natural/wild fish and aquaculture
- Other biological resources
- Water resources
- Land – land cover and land use, forest accounts
- Soil resources



Accounts for environmental activities and transactions

- Environmental activities
 - Environmental protection
 - Resource management
- Environmental Protection Expenditure Account
- Environmental Goods and Services Sector (EGSS) statistics
- Environmental taxes and subsidies



Combined presentation

- Comparison between monetary and physical information possible through use of
 - Common and aligned structures
 - Aligned measurement boundaries
 - Consistent classifications (especially industry)
- Many possibilities
 - Thematic approach for energy, water, emissions, forests
 - “Production function” approach for individual activities – e.g. agriculture
- Organisation of data in combined presentation allows simple derivation of indicators



“SECTOR” AND ACTIVITY VIEWS

| | Agriculture / Fishing / Tourism |
|-----------------------------|---------------------------------|
| Output (\$) | |
| Value added (\$) | |
| Employment (number) | |
| Assets (\$ / number) | |
| Land use (hectares) | |
| Water use (m ³) | |
| Energy use (joules) | |
| Carbon emissions (tonnes) | |
| Solid waste (tonnes) | |