Overview of the SEEA

United Nations Statistics Division

Regional Seminar on the System of Environmental-Economic Accounting in the Caribbean

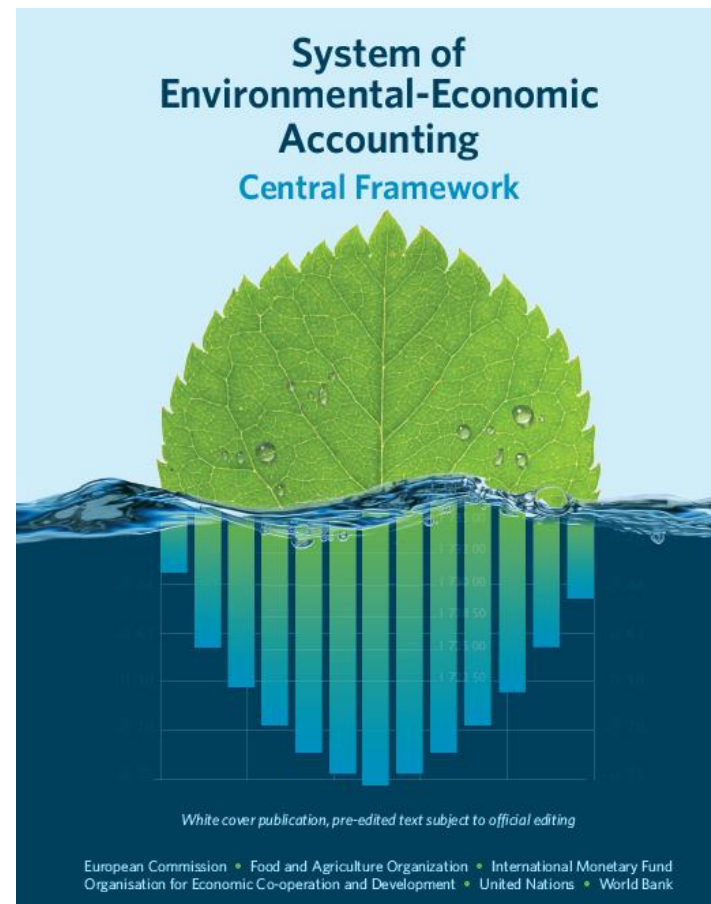6-7 February, Castries Saint Lucia

Policy settings

- Post-2015 UN development agenda/SDGs
- Barbados plan of action, Mauritius strategy of implementation
- UNDESA UNEP UNDP OECD initiatives on Green Growth/Green Economy
- Broader measures of progress/Beyond GDP
- World Bank Natural Capital Accounting/ WAVES
- Aichi targets of CBD strategic
  plan 2011-2020 (e.g. Target 2)
- UNDP Poverty and Environment
- UNEP 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

System of Environmental-Economic Accounting
Central Framework

White cover publication, pre-edited text subject to official editing

European Commission • Food and Agriculture Organization • International Monetary Fund
Organisation for Economic Co-operation and Development • United Nations • World Bank

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

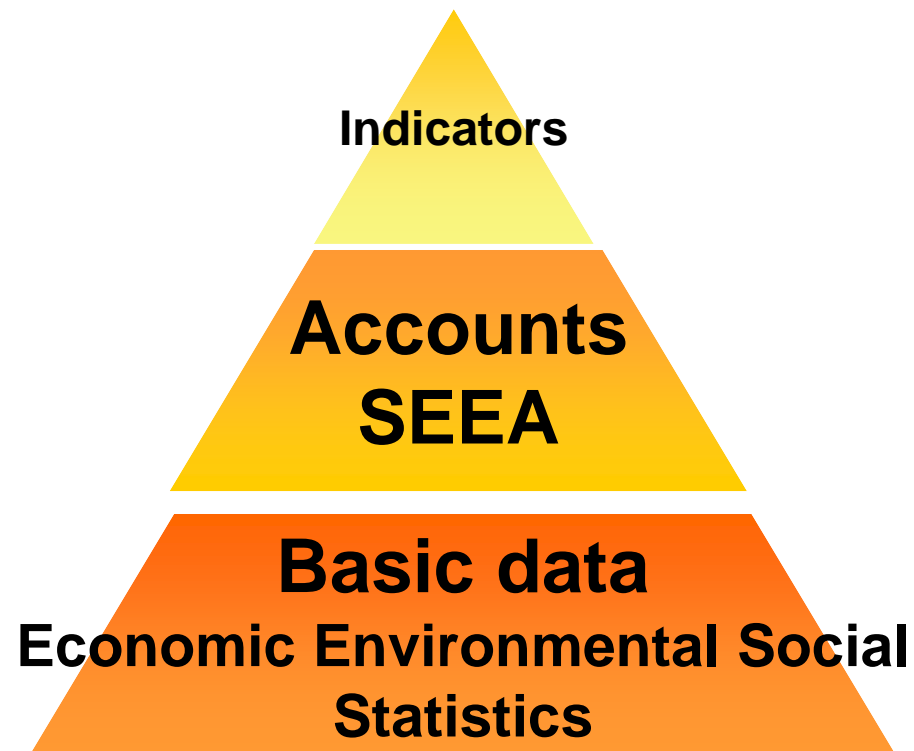Information is vital
…and it needs to be integrated

- 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
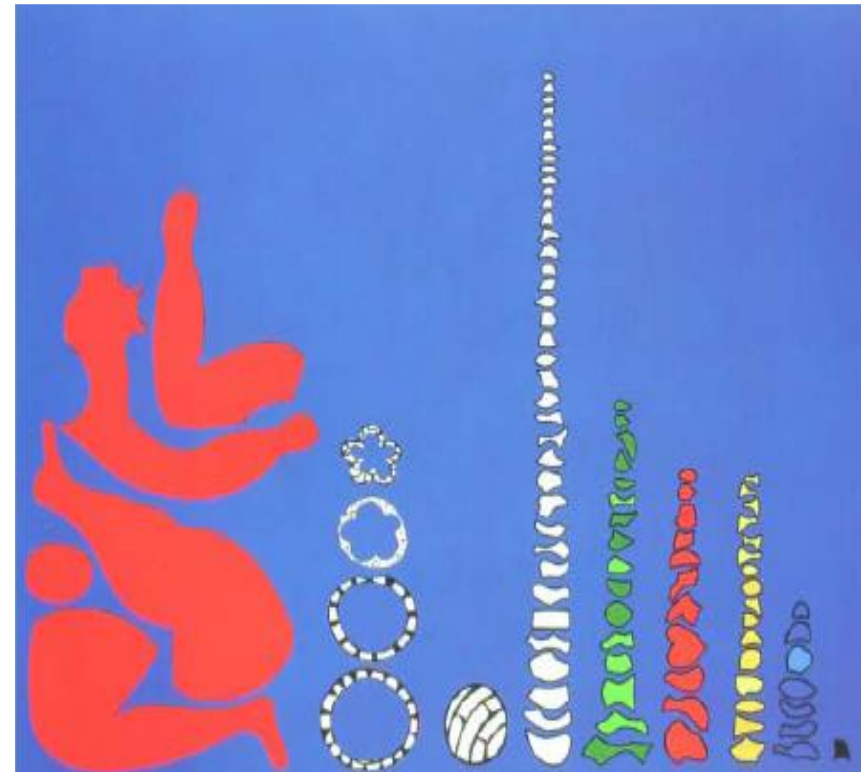
Solution: Integrated information

- Holistic picture

- Consistency of information and identification of data gaps

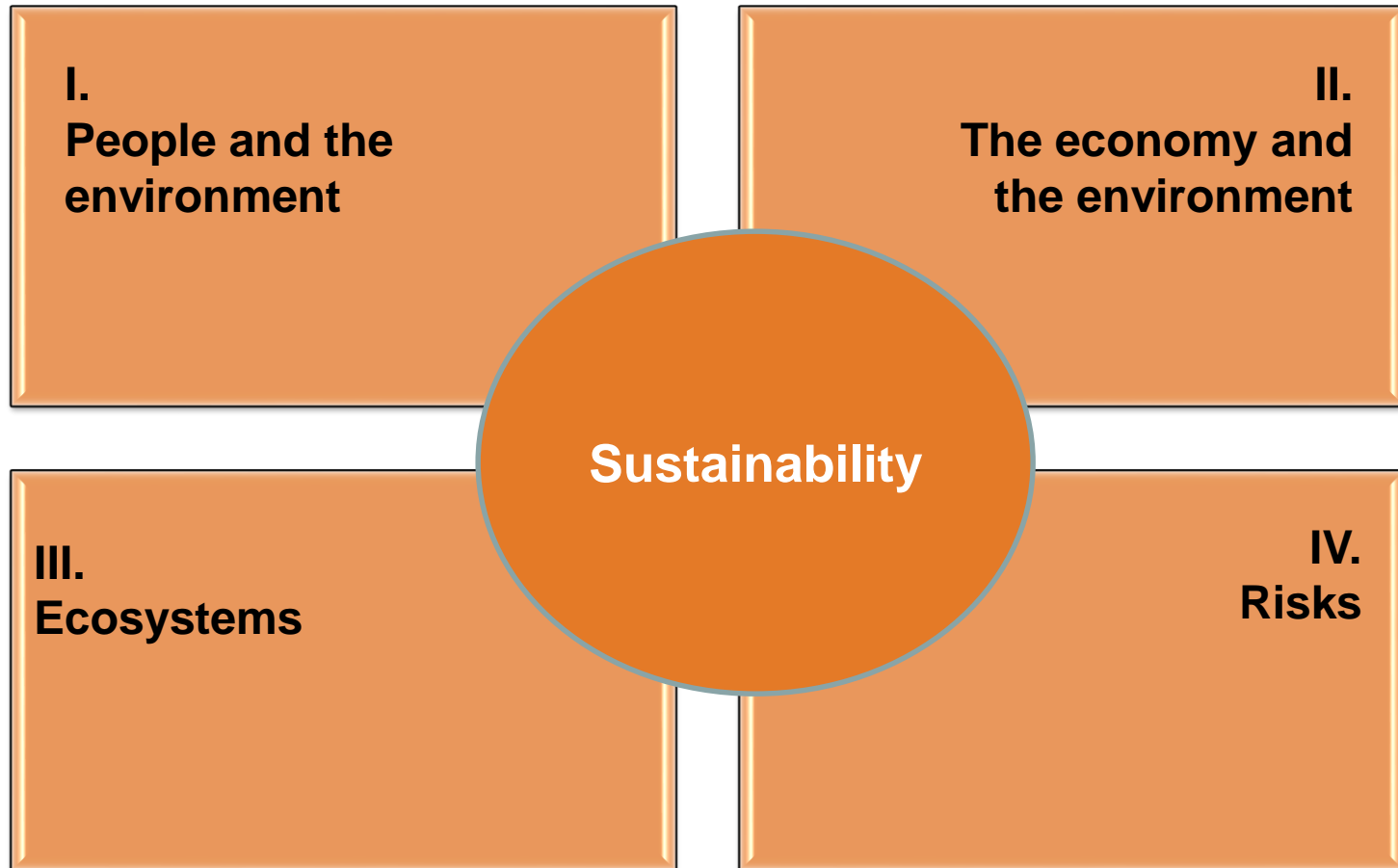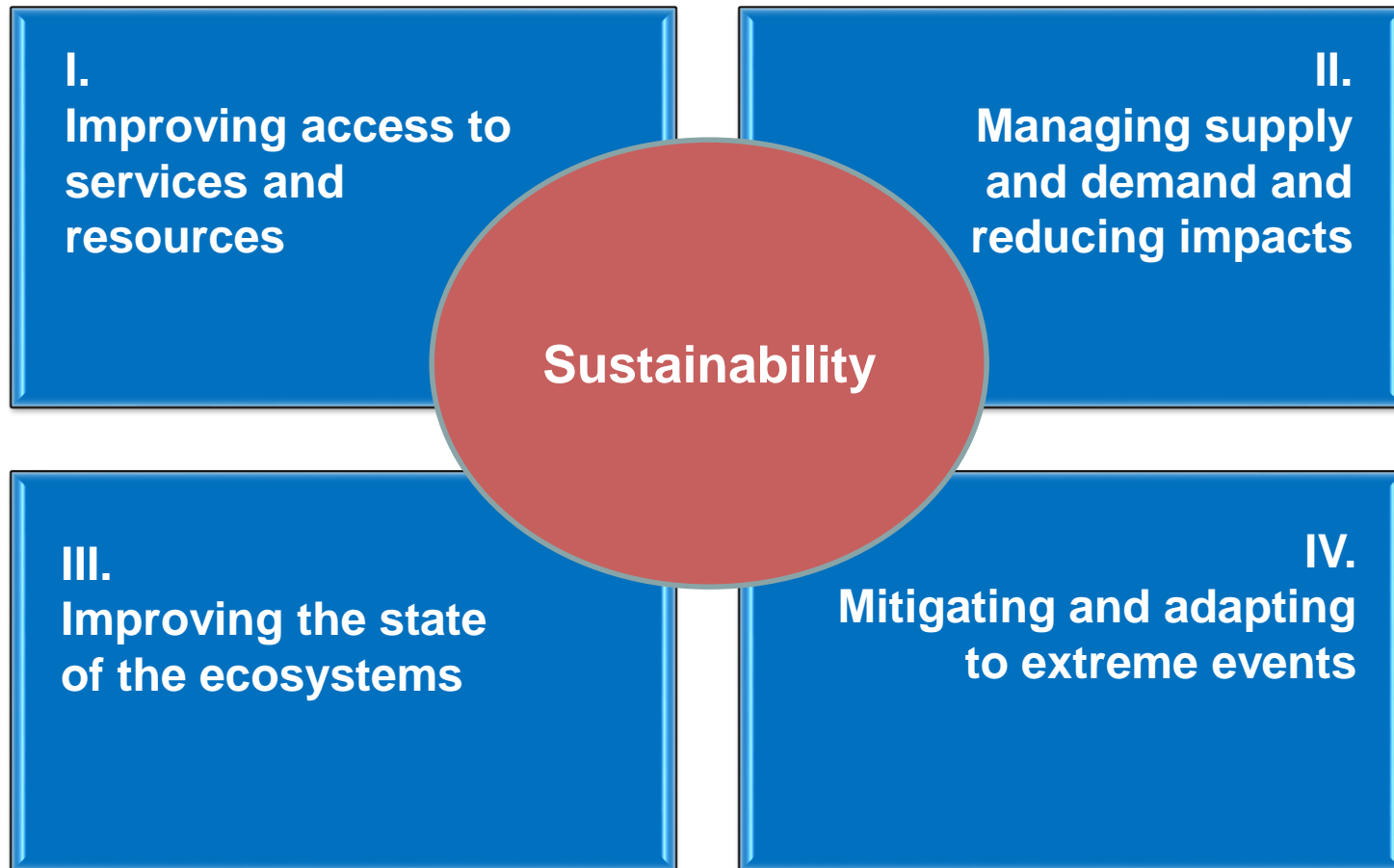- Interconnections between economy, environment and society

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

I.
People and the environment

II.
The economy and the environment

Sustainability

III.
Ecosystems

IV.
Risks

I.
Improving access to services and resources

II.
Managing supply and demand and reducing impacts

Sustainability

III.
Improving the state of the ecosystems

IV.
Mitigating and adapting to extreme events

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

Key information in this quadrant:

IV. Mitigating and adapting to extreme events

- Natural disasters
- Investments for mitigation
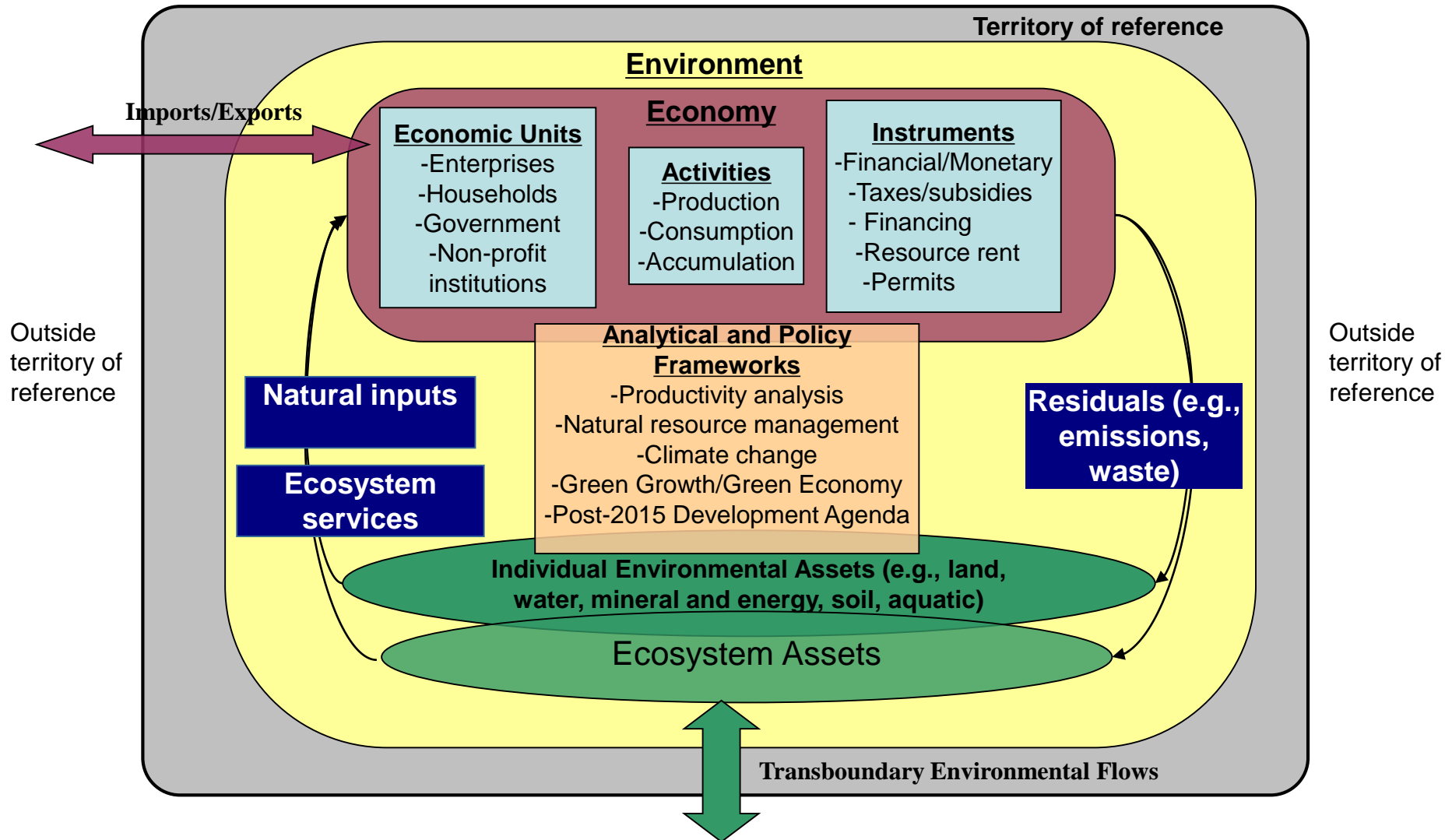- Investments for adaptation

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. m^2 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
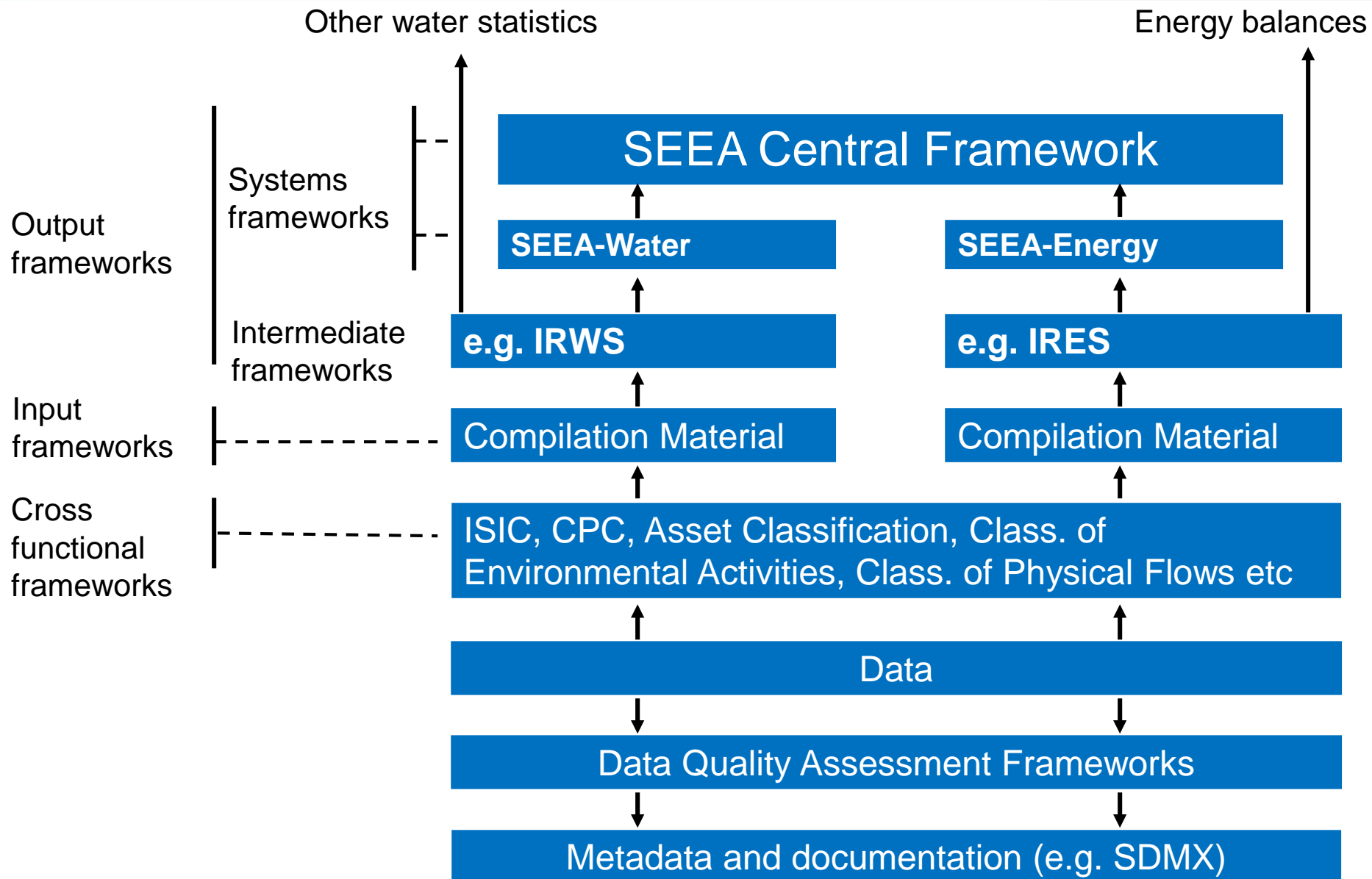
SEEA Conceptual Framework

Other water statistics

Energy balances

Output frameworks	Systems frameworks		**SEEA Central Framework**

SEEA-Water

SEEA-Energy

Intermediate frameworks

e.g. IRWS

e.g. IRES

Input frameworks

Compilation Material

Compilation Material

Cross functional frameworks

ISIC, CPC, Asset Classification, Class. of Environmental Activities, Class. of Physical Flows etc

Data

Data Quality Assessment Frameworks

Metadata and documentation (e.g. SDMX)

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
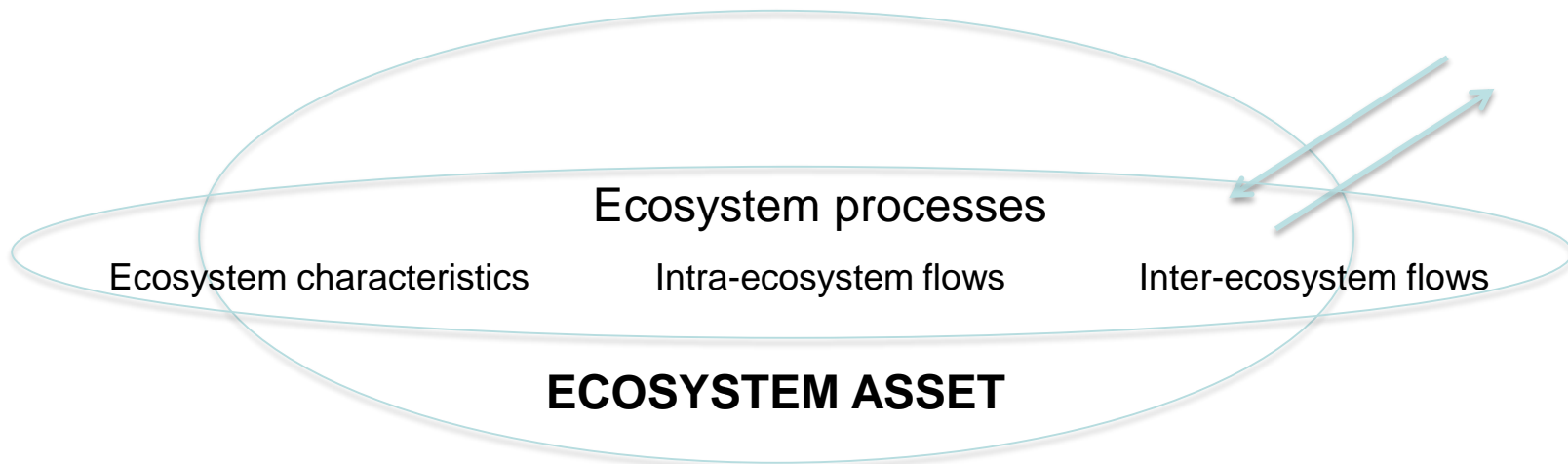
SEEA Experimental Ecosystem Accounting

- 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)
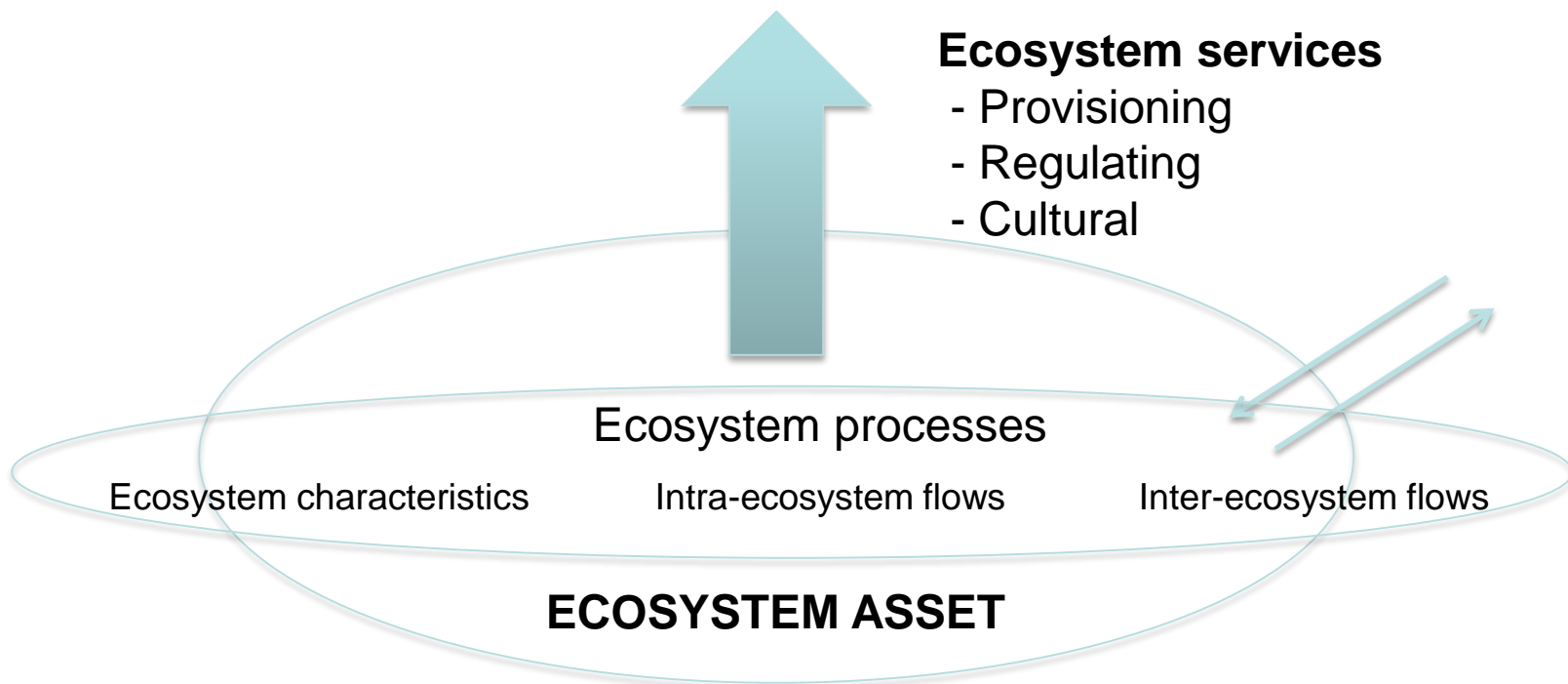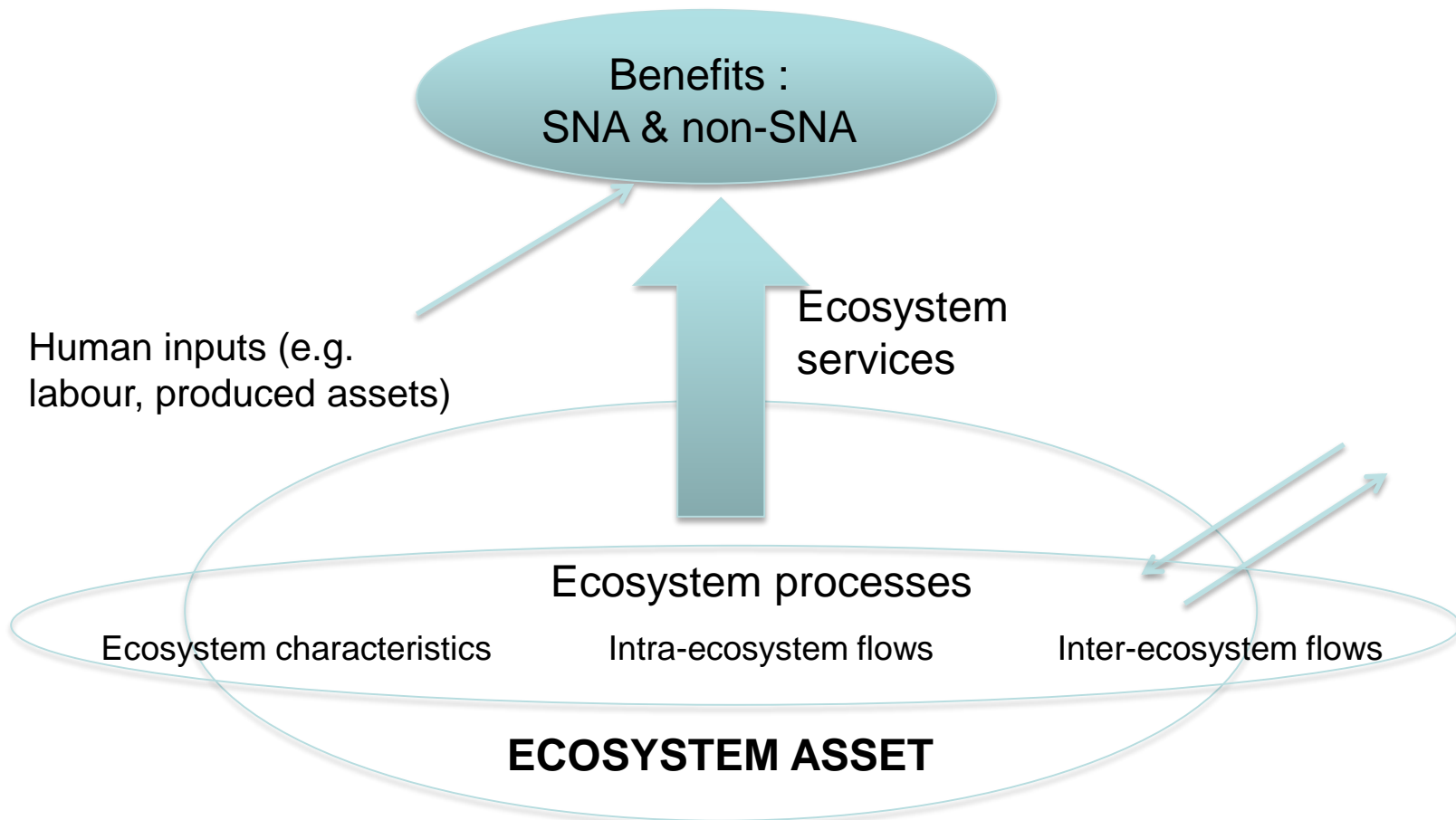
CORE SEEA ECOSYSTEM ACCOUNTING MODEL

Ecosystem processes

Ecosystem characteristics   Intra-ecosystem flows   Inter-ecosystem flows

ECOSYSTEM ASSET

CORE SEEA ECOSYSTEM ACCOUNTING MODEL

Ecosystem services
- Provisioning
- Regulating
- Cultural

Ecosystem processes

Ecosystem characteristics   Intra-ecosystem flows   Inter-ecosystem flows

ECOSYSTEM ASSET

CORE SEEA ECOSYSTEM ACCOUNTING MODEL

Benefits :
SNA & non-SNA

Human inputs (e.g. labour, produced assets)

Ecosystem services

Ecosystem processes

Ecosystem characteristics   Intra-ecosystem flows   Inter-ecosystem flows

ECOSYSTEM ASSET

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

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

"SECTOR" AND ACTIVITY VIEWS

	Agriculture / Fishing / Tourism
Output ($)	
Value added ($)	
Employment (number)	
Assets ($ / number)	
Land use (hectares)	
Water use (m3)	
Energy use (joules)	
Carbon emissions (tonnes)	
Solid waste (tonnes)	