

SNA to SEEA

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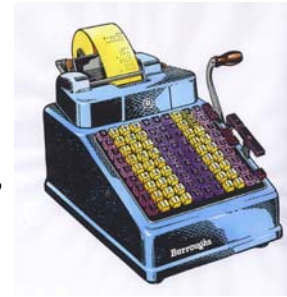
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Highlights of Presentation

- Environmental data are fragmented
- SEEA provides a **coherent measurement framework** for integrating environmental and economic data, by
 - linking to the System of National Accounts (SNA)
 - providing coherent concepts, methods and classifications across “themes” of environmental statistics

Back to accounting principles

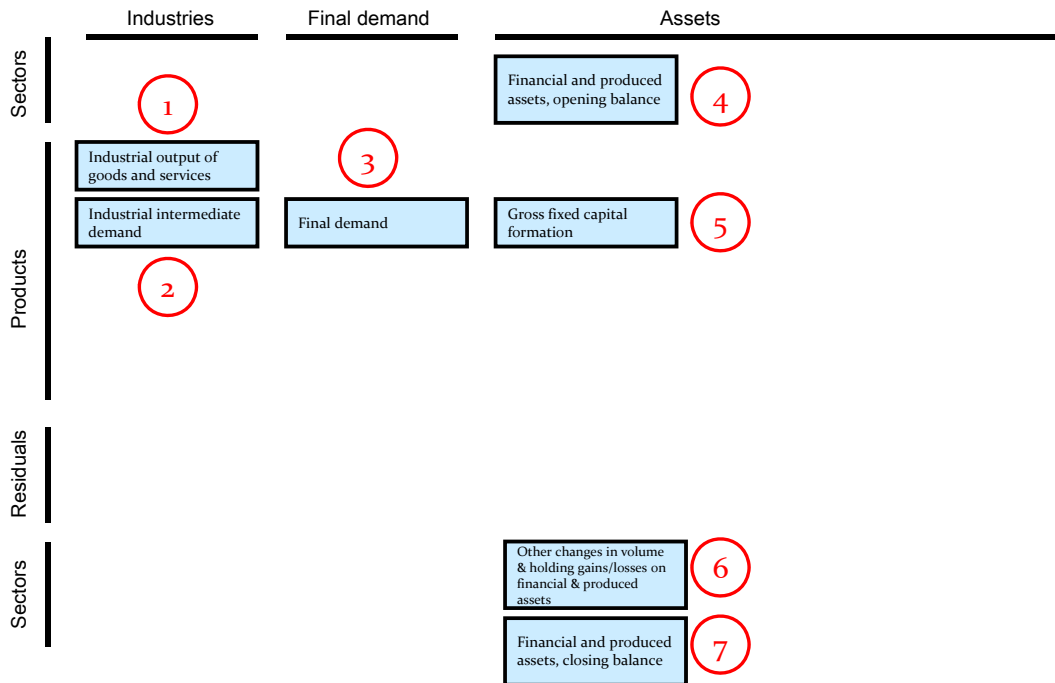


- Stock/flow → assets, supply, use
 - Asset tables: opening balances, additions, removals, closing balance
 - Supply/Use tables: Supplier to user
- Double/quadruple entry
 - Monetary and physical transaction between supplier and user
- Time of recording: When transaction occurred
- Consistent units of measure, concepts, classifications, methods & valuation rules

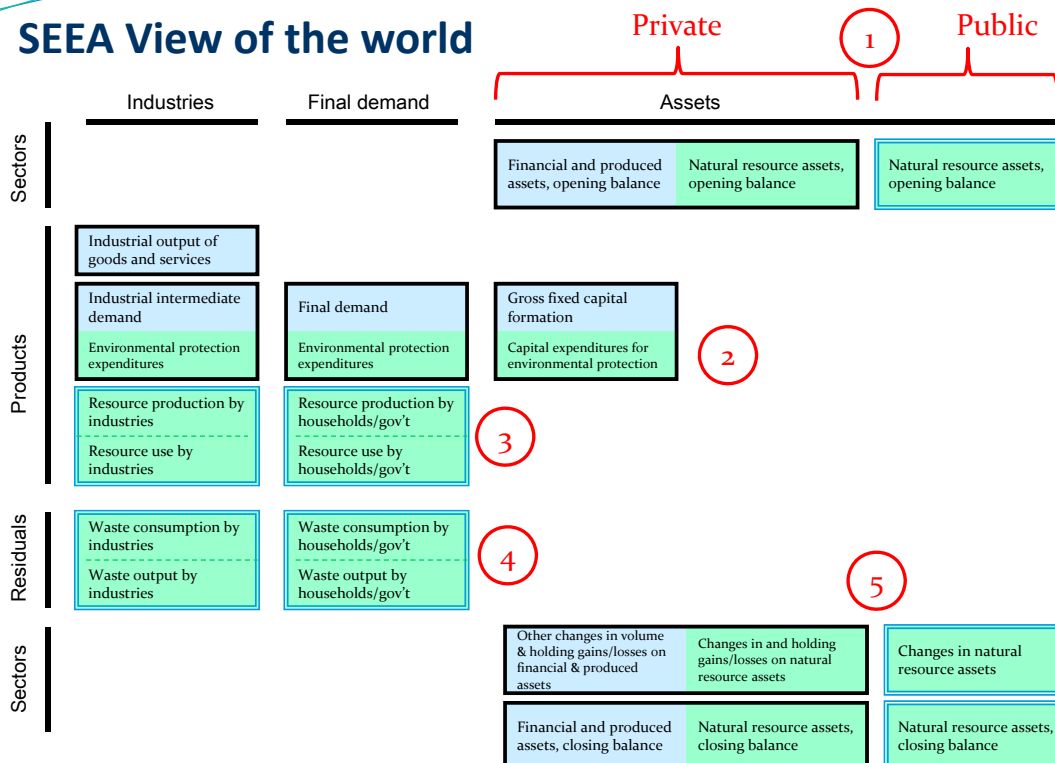
The SEEA and the SNA

- The SNA measures national economic activity, production and assets (wealth):
 - In monetary terms
 - By tracking transactions between **economic units** (businesses, households, governments)
- The SEEA measures environment/economy links:
 - Expands the asset boundary (includes natural assets)
 - Distinguishes expenditures on **environmental protection**
 - Records **physical** quantities of inputs to economy
 - Records **residuals** produced and consumed (by whom)
 - Records changes in private and public **natural assets**

SNA view of the world



SEEA View of the world



One environment: Two perspectives

Individual environmental assets & resources:

Timber
Water
Soil
Fish



Ecosystems: Biotic and abiotic elements functioning together:



Forests
Lakes
Cropland
Wetlands

SEEA Central Framework starts from the perspective of the economy and brings in information on natural inputs, pollution and environmental assets



SEEA Experimental Ecosystem Accounting starts from the perspective of ecosystems and links their services to economic and other human activity



Together, the approaches provide the foundation for measuring the relationship between the environment, and economic and other human activity

Environment statistics components

SEEA-CF (Central Framework)	<ul style="list-style-type: none"> • Assets • Physical flows • Monetary flows 	<ul style="list-style-type: none"> • Minerals & Energy, Land, Timber, Soil, Water, Aquatic resources • Materials, Energy, Water, Emissions, Effluents, Wastes • Protection expenditures, taxes & subsidies
SEEA Water; SEEA Energy; SEEA Agriculture, Forestry and Fisheries	Add sector detail	As above for Agricultural, Forestry and Fisheries sectors
SEEA-EEA (Experimental Ecosystem Accounting)	Adds spatial detail and ecosystem perspective	Extent, Condition, Ecosystem Services, Carbon, Water, Biodiversity
FDES (Framework for the Development of Environment Statistics)	Basic statistics for above plus...	<ul style="list-style-type: none"> • Extreme events and disasters • Human settlements and health • Protection, management & engagement

SEEA-CF – The Accounts



- **Assets** (stocks; physical and monetary):

- Mineral and energy resources
- Land
- Soil
- Timber
- Aquatic resources
- Other biological resources
- Water



SEEA-CF – The Accounts



- **Physical flows**

- Supply/use for materials (extract → consume)
- Material flows (through economy) to final demand (e.g., GHGs)
- Water supply/use
- Energy supply/use
- Residuals
 - Air emissions
 - Water emissions
 - Wastes (generated and used/recycled)



SEEA-CF – The Accounts



- **Monetary flows**

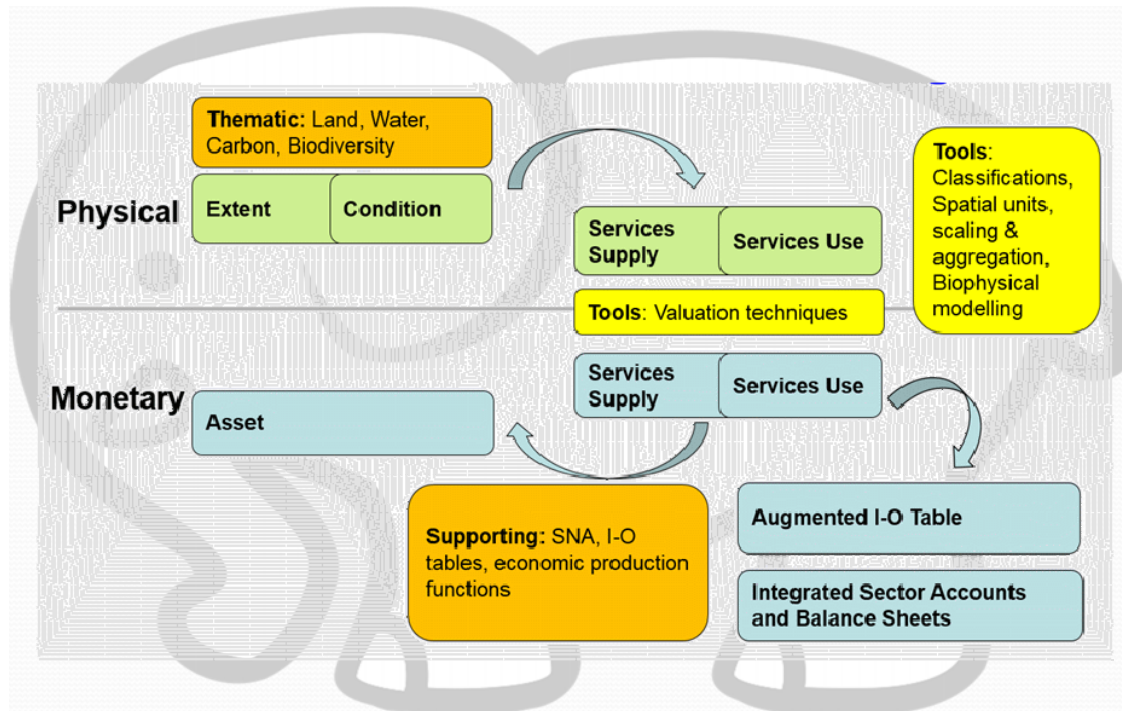
- Environmental protection expenditures
- Resource use and management
- Environmental goods and services sector (supply side)
- Environmentally-related payments by & to government (fines, fees, taxes, subsidies, concession payments)



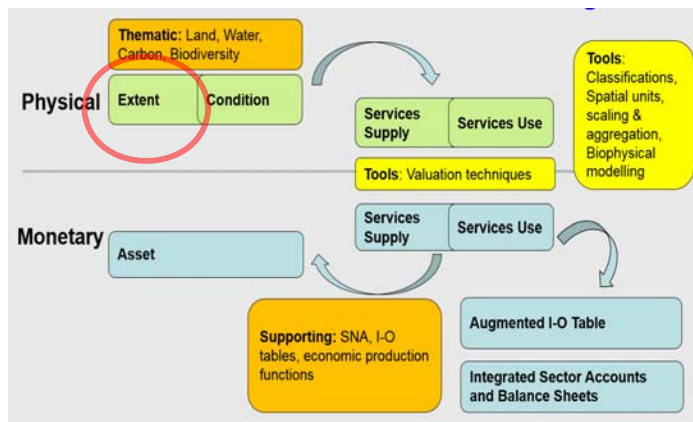
SEEA-EEA (Ecosystem Accounting)

- “Experimental” = in progress
- Spatial framework of ecosystem units (30-100m)
 - **Extent** of ecosystem types
 - **Condition** of ecosystem asset
 - Classification and valuation of **ecosystem services**
- Links to SEEA-CF and SNA
- Tested in Canada, Netherlands, Australia, Mauritius, pilot countries (Bhutan, Chile, Indonesia, Mexico, South Africa, Vietnam)

SEEA-EEA Overview



SEEA-EEA Accounts and tools

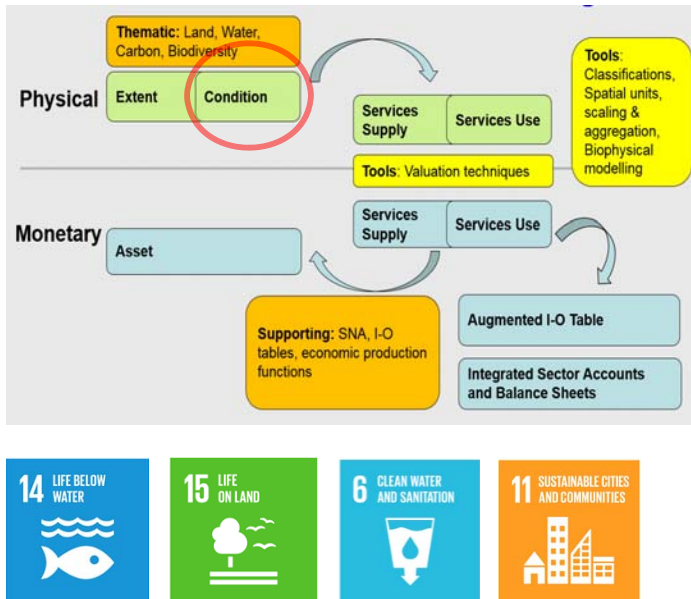


Extent account

- Ecosystem type
+ ownership and use
- Changes over time
→ land cover change



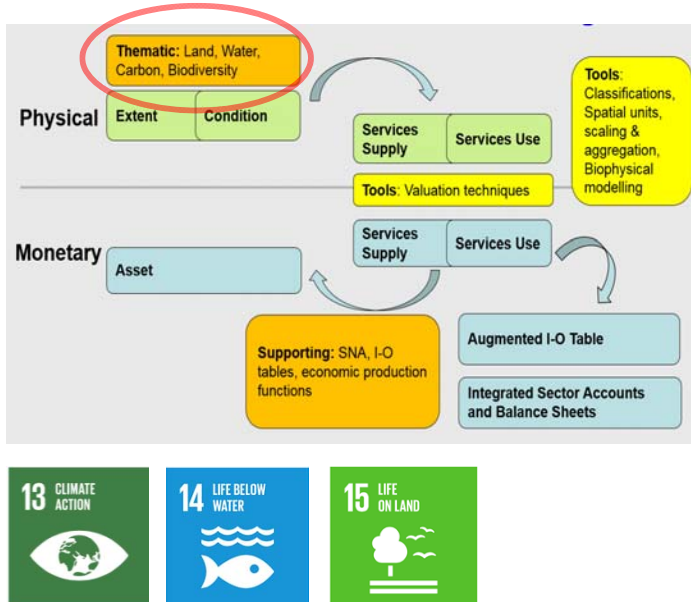
SEEA-EEA Accounts and tools



Condition account

- "Quality" and biophysical measures important to ecosystem services
- Overall condition, changes, location of changes
- Future flows of ES

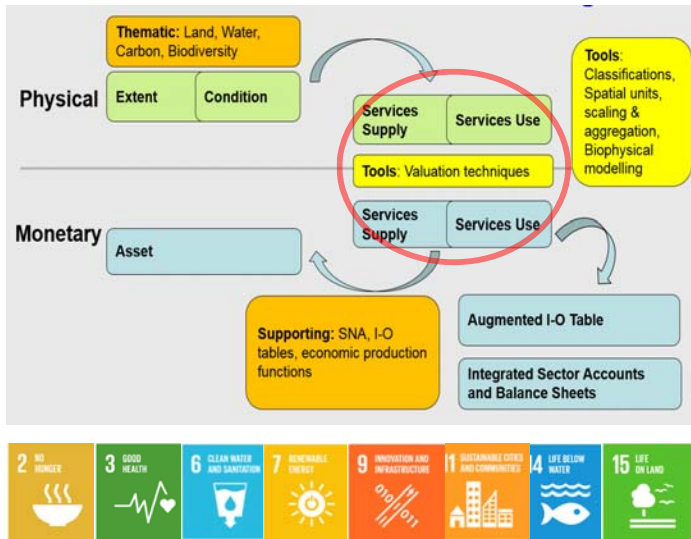
SEEA-EEA Accounts and tools



Thematic accounts

- Land (cover)
- Water (spatial detail, quality, ecosystems as beneficiaries)
- Biodiversity (species ranges, characteristics, populations)
- Carbon (focus on biocarbon)
- Contribute to **Condition Accounts**
- Focus on specific issues

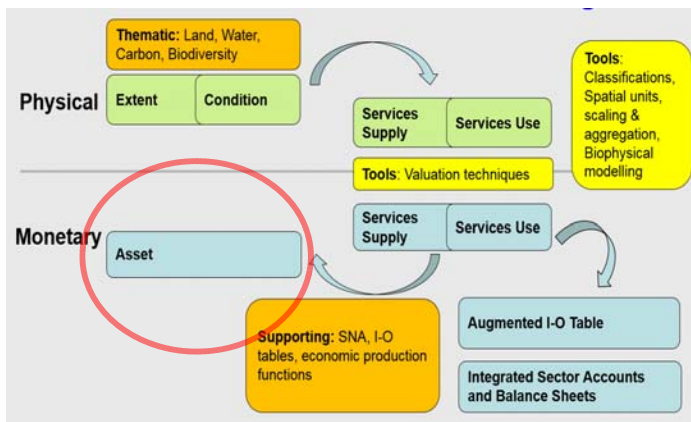
SEEA-EEA Accounts and tools



Ecosystem Services supply/use

- Physical measures
 - Use by beneficiaries
 - Valuation to estimate monetary values
- Contribute to monetary **Asset Account** & links to SNA

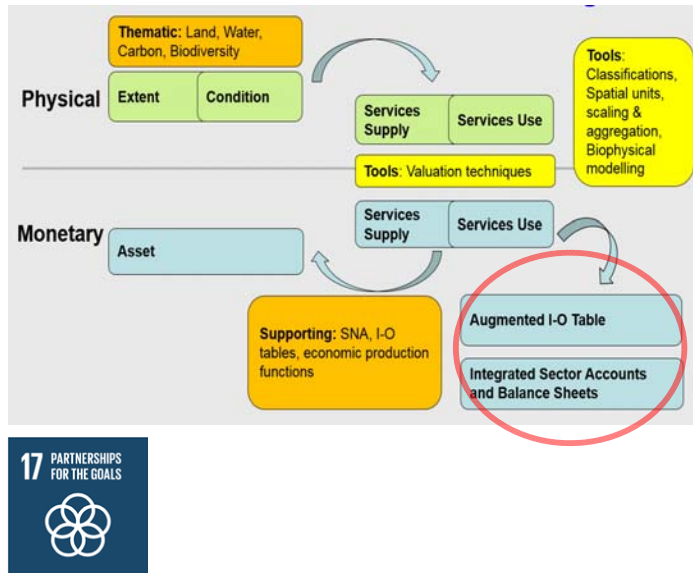
SEEA-EEA Accounts and tools



Monetary Asset

- Net Present Value of future flow of services
- Trade-offs
- Contribute to **Balance Sheets**

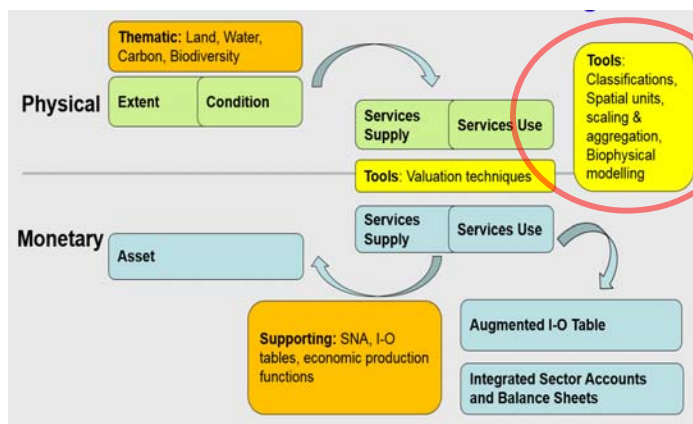
SEEA-EEA Accounts and tools



Links to SNA

- Ecosystem services in economic production functions
 - Degradation and depletion-adjusted aggregates (e.g., value added minus depreciation)
- Trade-offs

SEEA-EEA Accounts and tools



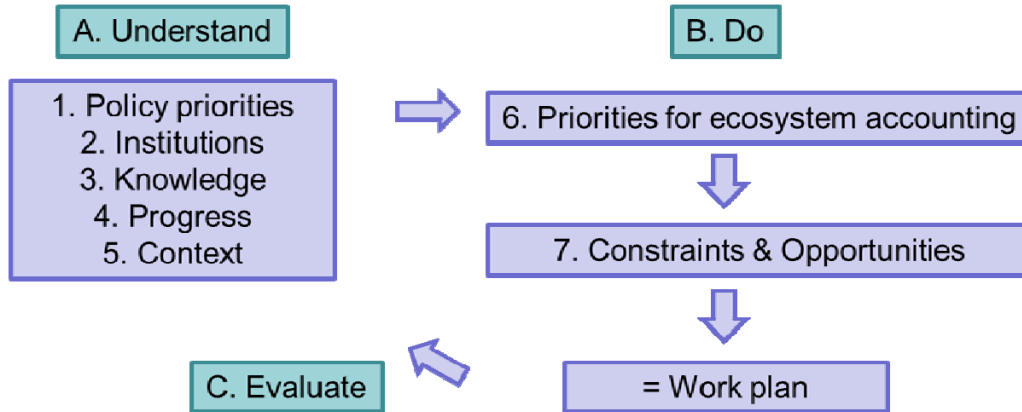
Tools

- Classifications (land cover, ecosystem services)
- Methods (Spatial units, scaling & aggregation)
- Biophysical modelling (future flows & filling gaps)

Other tools

Diagnostic Tool

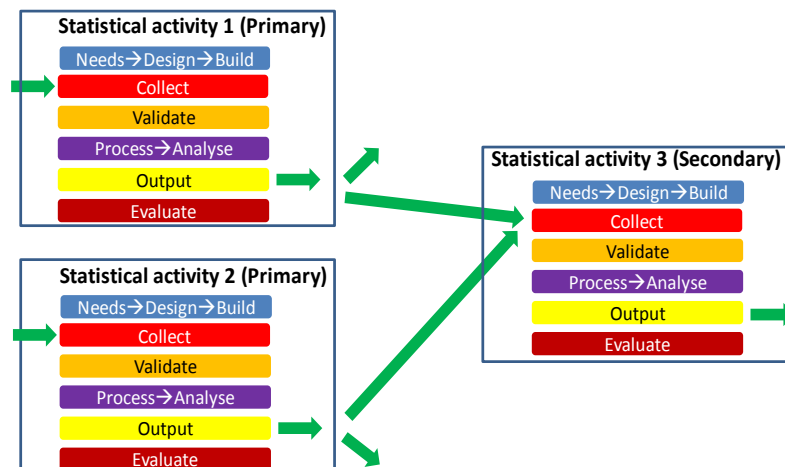
- Guide conversation strategic planning



Other tools

Inventory template for environment statistics

- To document external statistical “supply chain”



Other tools

Statistical and institutional mechanisms

- Leadership
- Funding
- Monitoring
- Implementation plan



Take home messages

“Good statistics are cheaper than bad decisions.”

- The SEEA is a very useful measurement framework to “disentangle” environment data
- Many countries are implementing it as a way of harmonizing, prioritizing, estimating data
- It is linked to many SDGs

References

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- UNSD. 2014. SEEA: <http://unstats.un.org/unsd/envaccounting/seea.asp>
 - Training materials: <http://unstats.un.org/unsd/envaccounting/workshops.asp?fType=2>
- World Bank. WAVES: <https://www.wavespartnership.org/>

Thank you

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