Advancing the SEEA
Experimental Ecosystem Accounting
Structure of Ecosystem Accounts

Advancing the SEEA-EEA Project

Why is a set of accounts needed?

- To organise information recognising breadth of information set and multiple perspectives
  - Stocks and flows – different accounting identities
  - Spatial units and beneficiaries
  - Physical and monetary measures

- To integrate with economic data
  - Key feature of the SEEA
  - Recognise linkages between accounts and between assets and services

- To support communication of information and further analysis

General features of SEEA EEA accounts

- National level coverage, multiple ecosystem types and multiple ecosystem services

- Able to integrate with standard economic data and apply accounting identities

- Compiled regularly

- In design assume data available, focus on communicating significant trends/structures in an aggregate context
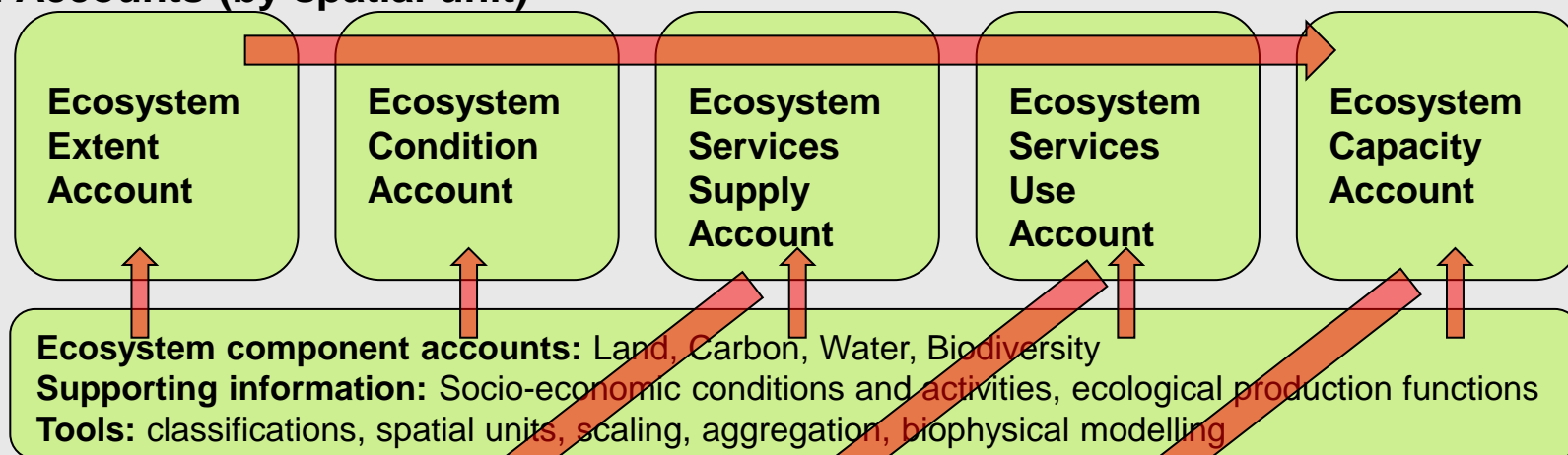
Proposed accounts for EEA TG (T 4.1)

	Primary ecosystem accounts	Ecosystem component accounts and related information
Feasibility and structure of accounts well advanced	Ecosystem extent account	Land cover account
	Ecosystem condition account	Carbon account
	Ecosystem services supply account	Water resources account
	Ecosystem services use account	Biodiversity account
		Drivers of ecosystem condition & change
Structure of accounts under development and discussion	Ecosystem capacity account	Valuations of ecosystem services
	Ecosystem asset account	Reference conditions
	Augmented input-output table*	
	Integrated sector accounts & balance sheets*	

* These accounts reflect the integration of ecosystem accounting based information into the standard set of national accounts
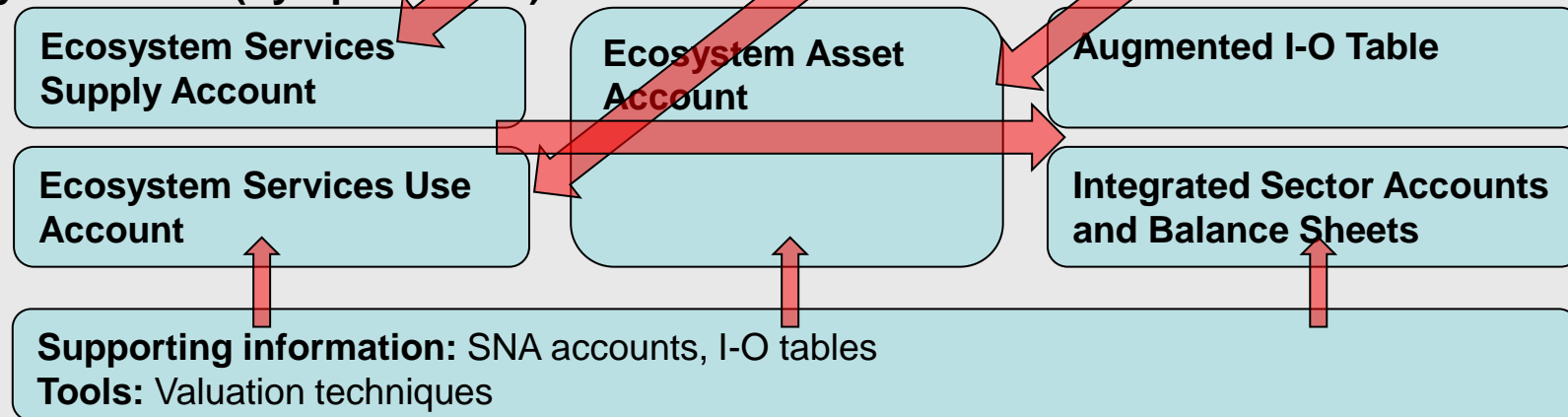
SEEA-EEA accounts and linkages (Fig 4.1)

Physical Accounts (by spatial unit)

| Ecosystem Extent Account | Ecosystem Condition Account | Ecosystem Services Supply Account | Ecosystem Services Use Account | Ecosystem Capacity Account |

Ecosystem component accounts: Land, Carbon, Water, Biodiversity
Supporting information: Socio-economic conditions and activities, ecological production functions
Tools: classifications, spatial units, scaling, aggregation, biophysical modelling

Monetary Accounts (by spatial unit)

| Ecosystem Services Supply Account | Ecosystem Asset Account | Augmented I-O Table |
| Ecosystem Services Use Account | | Integrated Sector Accounts and Balance Sheets |

Supporting information: SNA accounts, I-O tables
Tools: Valuation techniques

Primary dimensions of each account

- Ecosystem extent account
  - Unit: hectares
  - Dimensions: Ecosystem asset (spatial units) X Open/close/change in stock

- Ecosystem condition account
  - Unit: mixed depending on characteristic/indicator
  - Dimensions: Ecosystem asset (spatial units) X Characteristic/indicator

Primary dimensions of each account

- Ecosystem services supply account

  - Unit: mixed depending on ecosystem service / currency units

  - Dimensions: Ecosystem asset (spatial units) X Type of ES (e.g. CICES)

- Ecosystem services use account (physical)

  - Unit: mixed depending on ecosystem service / currency units

  - Dimensions: Beneficiaries (industry/sector) X Type of ES (e.g. CICES)

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Primary dimensions of each account

- Ecosystem capacity account
  - Unit: mixed
  - Dimensions: Ecosystem asset (spatial units) X ??

- Ecosystem asset account (monetary)
  - Unit: currency unit
  - Dimensions: Ecosystem asset (spatial units) X Open/Close/Change in stock

Primary dimensions of each account

- Augmented I-O or SU table
  - Unit: currency units
  - Dimensions: Products & ES X Industry & Ecosystem assets

- Sequence of accounts and balance sheets
  - Unit: currency units
  - Dimensions: National accounts sequence + degradation X Institutional sector

Issues: Decision and advice

- Which accounts should be included in a set of ecosystem accounts?

- What names should be given to each of the accounts?

- Does the proposed sequencing of the accounts match the:
  - requirements for information
  - availability of source data / methods

- What advice should be provided to countries in terms of which accounts are of highest priority?

Issues: Testing

- Is there an appropriate scale for the purposes of international comparison?

- What is the appropriate structure for the ecosystem condition account? What options are available for the aggregation of physical measures of condition?

- What classification of ecosystem services should be used in the ecosystem supply and use accounts?

- What are the implications for the compilation of component accounts (carbon, water, biodiversity, etc)?

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Issues: Research

- How should ecosystem capacity be defined and what links can be drawn to the calculation of the net present value of ecosystem assets? What would the structure of an ecosystem capacity account look like?

- How should ecosystem degradation be defined, valued in monetary terms and attributed to economic units?

- How should expenditure on ecosystem enhancement be treated from a national accounting perspective?

- Are the proposed integrated accounts appropriate and relevant in terms of linking ecosystem accounting with the SNA?

Topics for breakout groups

1. The structure of the ecosystem condition and ecosystem services accounts

2. Implications for the structure of the condition and services accounts for component accounts (carbon, water, biodiversity)

3. Ecosystem capacity – definition, links to measuring ecosystem assets, capacity account structure

4. Ecosystem degradation – definition and valuation

5. Integration with the national accounts – attributing degradation, treating ecosystem enhancement and structuring integrated accounts

6. Indicators from ecosystem accounting – what is possible?

Summary and outcomes from Session 5

- Structure of accounts
  - Coverage OK and naming OK for primary accounts
  - Need to explain why so many accounts
  - Reconsider naming of "component" accounts
  - Need to present initial designs for discussion

- Sequencing of accounts
  - Highlight modular nature with varying entry points
  - Describe links between measuring condition and services/use
  - Reconsider links between component accounts and primary accounts

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Summary and outcomes from Session 5

- Condition measurement
  - Multiple approaches that can be tested, units of measurement to be determined (e.g. use of quality scales)
  - Need reference condition but no clear choice

- Accounting logic
  - Confirm relevance of the cascade model but need for better description of
    - Final ecosystem services to benefits
    - Place of intermediate and supporting services
    - Concepts of production functions

Summary and outcomes from Session 5

- Capacity
  - Appropriately considered a research issue but of high priority
  - Need to explain role/relevance of capacity in the accounting sequence

- Degradation
  - Definition links declines in condition and declines in service flow and hence there is a link to capacity
  - Need to be able to understand annual change compared to accumulated degradation
  - Focus on land use change around cities

Summary and outcomes from Session 5

- Integrated accounts
  - Seems good potential to develop integrated accounts (assuming data compilation possible)
  - Challenge of separating ecosystem values from current values in SNA

- Indicators
  - Need to link account design and indicators
  - Accounts not just data tables
  - Possible indicator areas
    - Ecosystem condition
    - Linking biodiversity to food, energy and water "nexus"
    - Regulating services
    - Rio conventions and SDGs

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