SEEA-Central Framework
an overview

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SEEA: System of Environmental Economic Accounting

- Multi-purpose statistical framework that describes the interaction between the economy and the environment (stocks en flows)

- Integration of various types of statistics: economic statistics; energy and environment statistics

- The SEEA consists of a coherent, consistent and integrated set of tables and accounts

- Flexible system adapted to countries priorities

- Satellite account to the SNA

- International standard
Towards SEEA 2012

1993  Handbook – interim publication
2003  Updated SEEA handbook – manual of best practices
2006  Decision by UNSC to revise SEEA-2003 handbook into a statistical standard
2012: **Vol 1: SEEA Central Framework**
Recognized as **statistical standard** by UNSC
UN agencies, World Bank, IMF, OECD and the European Commission
• Ch 3: Physical flow accounts
• Ch 4: Environmental activity accounts
• Ch 5: Asset accounts
• Ch 6: Integrating and presenting the accounts
2013  Implementation strategy adopted by Statistical Commission
2013: SEEA Experimental Ecosystem Accounting
Not a statistical standard but conceptual framework for testing by countries

2013: SEEA Extensions and applications
Analyses, applications, indicators of SEEA-CF data
Satellite accounts

labour accounts

agriculture accounts

Household accounts

tourism accounts

regional accounts

Environmental accounts
SEEA builds on SNA

Satellite account of SNA:
• Use of accounting approach
• Use of same concepts, definitions and classifications

Extensions / modifications
• Physical dimension: stocks and flows
• Addition of non-monetary flows
• Additional classifications and definitions: for example classification for environmental activities, natural resources etc.
• Extension of scope: extended asset boundary
Why SEEA?

• Economic prosperity depends on the ability of the environment to supply natural resources and to absorb pollution.

• The development of the SEEA has been driven by a desire of policy makers to have more complete and robust information on the economy and the environment and to better understand the interactions between the two.
Policy background

- Post-2015 UN development agenda/SDGs
- Green Growth/Green Economy
- Broader measures of progress/Beyond GDP
- Natural Capital Accounting/ WAVES
- TEEB
- Well-being indicators/Measuring progress
- Wealth accounting
- Europe 2020
- Convention on biodiversity
- National policies
Single statistics: Information silos

- Lot of diversity; developed independently to address a particular issue
- Not always easy to see the whole picture, or how it relates to other statistics
- Correlation is difficult; (different definitions, concepts, updates etc)
SEEA: Integrated information

- Single design were single parts fit together
- Still room for diversity and individual outputs.
- Consistent information and identification of data gaps
- Interconnections between economy, environment and society
Accounts of the SEEA-CF

1. Physical flow accounts

2. Asset accounts

3. Environmental activity accounts

4. Combined physical and monetary accounts
1. Physical flow accounts (PSUT)
### Supply table

<table>
<thead>
<tr>
<th></th>
<th>Industries</th>
<th>Households</th>
<th>Accumulation</th>
<th>Rest of the world</th>
<th>Environment</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Natural inputs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Products</td>
<td>Output</td>
<td></td>
<td></td>
<td>Imports</td>
<td></td>
<td>Total supply of products</td>
</tr>
<tr>
<td>Residuals</td>
<td>Residuals generated by industry</td>
<td>Residuals generated by final household consumption</td>
<td>Residuals from scrapped and demolition of produced assets</td>
<td></td>
<td></td>
<td>Total supply of residuals</td>
</tr>
</tbody>
</table>

### Use table

<table>
<thead>
<tr>
<th></th>
<th>Extraction of natural inputs</th>
<th>Extraction of natural inputs</th>
<th>Household consumption</th>
<th>Gross capital formation</th>
<th>Exports</th>
<th>Total use of products</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Natural inputs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total use of natural inputs</td>
</tr>
<tr>
<td>Products</td>
<td>Intermediate consumption</td>
<td>Household final consumption</td>
<td></td>
<td></td>
<td></td>
<td>Total use of products</td>
</tr>
<tr>
<td>Residuals</td>
<td>Collection and treatment of waste and other residuals</td>
<td>Accumulation of waste in controlled landfill sites</td>
<td>Residual flows direct to environment</td>
<td></td>
<td></td>
<td>Total use of residuals</td>
</tr>
</tbody>
</table>
Examples of indicators physical flow accounts

- Decoupling
- Efficiency
- Dependencies
- Environmental impact
- Footprint analyses
- Input/output analyses
- Circular economy
- Biobased economy
2. Asset accounts

**Environmental assets**: the naturally occurring living and non-living components of the earth that may provide benefits to humanity.

The scope of environmental assets in the SEEA-CF is defined through a focus on the individual components that comprise the environment.

- Energy reserves, timber, fish etc.

**Why asset accounts**: Measure depletion and degrading of environmental assets as a result of economic activity.

Physical scope is not limited to those assets with economic value.
**Accounting structure**

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Opening stock of environmental assets</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Additions to stock</strong></td>
<td></td>
</tr>
<tr>
<td>Growth in stock</td>
<td></td>
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<tr>
<td>Discoveries of new stock</td>
<td></td>
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<tr>
<td>Upward revaluations</td>
<td></td>
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<tr>
<td>Revaluations</td>
<td></td>
</tr>
<tr>
<td><strong>Total additions of stock</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Reductions of stock</strong></td>
<td></td>
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<tr>
<td>Extractions</td>
<td></td>
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<tr>
<td>Normal loss of stock</td>
<td></td>
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<tr>
<td>Catastrophic losses</td>
<td></td>
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<tr>
<td>Downward revaluations</td>
<td></td>
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<tr>
<td>Revaluations</td>
<td></td>
</tr>
<tr>
<td><strong>Total reductions in stock</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Revaluation of the stock</strong></td>
<td></td>
</tr>
<tr>
<td>Closing stock of environmental assets</td>
<td></td>
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</tbody>
</table>

* Only applicable for asset accounts in monetary terms
Examples of indicators asset accounts

- Wealth of natural resources
- Development both monetary and physical resources over time
- Where and when the benefits and costs of natural resource use accrue
- Depletion adjusted income and (genuine) saving
3) Accounts for environmentally related activities and transactions

- Environmental expenditure; environmental goods and service sector; emissions permits; environmental subsidies; taxes
- Explicitly identify environmental transactions already existing in the SNA
- Classification according to environmental activity (CEA)
Examples of indicators for environmental activities and transactions

- National expenditure on environmental protection
- Environmental versus other taxes
- Green value added (as share of GDP) and Green jobs (as share of total employment)
Data sources for environmental accounts

1) Existing statistics and accounts
   - National accounts
   - Economic statistics (international trade statistics, production statistics)
   - Energy statistics (energy balances, data on renewable energy)
   - Environmental statistics (emission inventories, waste, nutrient balances)
   - Nature and agricultural statistics (extraction biomass, land cover)
   - Other: transport statistics, price statistics, consumption statistics etc.

2) Survey data
3) Administrative data
4) External sources (expert reports, government reports, etc.)
Compilation

• Collection of data sources
• Putting the data in the accounting structure
• Correcting for SNA / SEEA concepts: for example correction for residence principle
• Applying SEEA classifications
• Confront data from different sources and make adjustments
• Identify and fill data gaps
Summary: why SEEA?

Relevance
- Taking the environment into account
- Monitoring the interactions between the economy and the environment with a consistent set of indicators to support policy makers
- Can also be used with a limited set of information

Consistency and reliability
- Provides checks and balances (supply = use)
- Ensures data are internally consistent
- Allows various types of disaggregation: activity (ISIC), sector, region, purpose etc.)
- Allows comparisons in time and between countries

Efficiency
- No additional surveys needed
- Environmental accounts can also be used to strengthen national accounts