

# Guidance note A3: A3 Update of existing information on EE-IOT

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# Introduction

- Increasing:
  - user interest
  - statistics production
  - data availability
- Better methods for statistics production
- Updated texts in standards and guidance related to the SEEA

# Status of current guidance

- **UN Handbook och Supply- and use tables and input-output tables:**
  - Producing monetary input-output tables from supply-use tables (single country and multicountry)
  - Physical supply-use tables (Physical input-output tables as analogous to monetary)
  - Environmental extensions derived from physical supply- and use tables
- **SNA 2025:**
  - Chapter 36 on Input-output tables – extensive coverage of production of monetary IO from SUT
  - Some relevant material on producing multicountry input-output tables
  - Relevant analytical methods (in particular trade in value added)
  - Some mention of EE-IOT and related analyses but no details (refers to SEEA documents)
- **SEEA CF 2012:**
  - Section 2.4 “compiling and contrasting monetary and physical data in meaningful ways are at the heart of the SEEA philosophy”
- **SEEA Applications and extensions:**
  - Presentation of format of IO tables
  - Detailed explanation of generic Leontief demand-pull model.
  - Examples of their application

# Current status for input-output tables

- State of the art for national statistical offices:
  - to produce and regularly update detailed monetary input-output tables
  - variable production and updating of environmental extensions
- Global multiregional input-output tables (GMRIO):
  - 11 initiatives listed in recent OECD review.
  - Most are results of research collaborations at universities
  - Exceptions are OECD ICIO, FIGARO, ADB MRIO

# Environmental extensions in GMRIO

- Environmental extensions for GHGs are relatively well-developed, though methods do diverge considering the allocation to products/industries
- Data on material use are also reasonably well-developed
- Measurement of air pollutants and water use are conceptually more challenging, and location subannual time aspects are a more important aspect here
- Available data on water use are only available on very high levels of aggregation, which are then subdivided to economic activities based on assumptions
- Multiple datasets for land use exist, but sources and methodologies vary widely
- Data on ecosystem services are currently very limited.

# Examples of current practice using EE-IOT to produce statistics

- a. The Netherlands statistical office currently produces consumption-based environmental pressures for greenhouse gas emissions, material use, land use, biodiversity and water.
- b. Eurostat produces environmental footprints for GHG emissions with breakdowns by greenhouse gas for all EU member states, also tool for material footprint
- c. The UK publishes official statistics on GHG emissions from consumption
- d. Statistics Sweden publishes official statistics on environmental pressures from consumption. This includes greenhouse gas and other air emissions.

# Current methods in use for EE-IOT based statistics

- **Single regional model:** Has been applied by Eurostat, Stats New Zealand
- **MRIO model** (such as that applied by Eurostat to produce consumption-based greenhouse gas emissions for all member states)

## ”Mixed” models:

- **Single-country national accounts compatible (SNAC) (UK):**
  - Inserting a national table in a GMRIO and rebalancing ”around” the national table
- **Simplified SNAC** (Stats Sweden, Stats Netherlands, Danish Energy Agency):
  - Use a GMRIO to produce multipliers for env pressures from imports
  - Apply these in a single regional analysis

# SEEA CF 2028: Structure and compilation of EE-IOT

Establish the format of the following:

- The input-output table
- Input table of imports (relevant for certain current methods)
- Input-output table with net exports
- Natural inputs and residuals
- Hybrid input-output tables
- Multicountry input-output tables
- Physical input-output tables (?)
  
- Suggest to cover compilation issues SUT => IOT and for environmental extensions

# SEEA CF 2028: Analytical methods for producing EE-IOT-based statistics

- Focus on EE-IOT-based consumption-based environmental pressures (Leontief demand-pull model)
- See also inventory of methods for statistics in practice:
  - Single regional analysis
  - Multiregional analysis
  - SNAC
  - Simplified SNAC

# Consistent terminology can be important for increased uptake and use of stats

- **“Environmental pressures\* from *domestic final demand*”** is accurate in the national accounts perspective but not necessarily well understood for this application
- **“Consumption-based environmental pressures\*”** is currently used in EE-IOT stats production though not entirely consistent with SNA
- E.g. **“greenhouse gas footprint”** is currently used in EE-IOT stats production, though used to refer to data not in terms of a physical area and different from original sustainability science context

(\*“**Environmental pressures**” is a well established term (DPSIR) and relates well to existing SEEA 2012 physical flows)

# Options for conceptual treatments: structure of EE-IOT

	Small	Medium (lagom)	Large
<b>Structure of EE-IOT</b>	<b>Reference to relevant sections</b> of UN SUT IOT Handbook for relevant table formats	<b>Incorporate text and structures into the SEEA CF 2028:</b> with a focus on monetary IOT and environmental extensions. No special texts on PIOT beyond reference in alternative “small”	Include <b>specific coverage of potential PIOT structures</b>

# Options for conceptual treatments: Compilation and data sources

Small	Medium (lagom)	Large
<p>Reference to relevant sections of <b>UN SUT IOT Handbook</b> for relevant table formats (monetary tables) and to <b>SEEA CF Chapters for EE</b>. Focus on producing IOT from SUT, and producing environmental extensions.</p>	<p>Some detail about relevant <b>compilation methods</b> (monetary IOT and environmental extensions) in order to be able to comment more specifically about the <b>relevance of certain compilation methods for EE-IOT and analyses</b></p>	<p>Some <b>analytical detail about compilation methods</b>, in particular hybrid tables for intermediate use as relevant their application (e.g. better for material use)</p>

# Options for conceptual treatments: Analytical methods

Small	Medium (lagom)	Large
<p>Reference to sources for relevant <b>methods, with a focus on consumption-based environmental pressures for statistics production</b> (Leontief demand-pull based).</p> <p><b>Description of structures and potential variables</b> for EE-IOT analysis-based statistics relevant for</p> <p>Some mention of <b>other possible and relevant analytical methods</b></p>	<p><b>Descriptions and main equations for relevant methods</b> with explanations for consumption-based environmental pressures.</p> <p>Some comment on relevance of methods and multidimensional quality considerations</p>	<p><b>Real examples of analyses from current production practices</b> for consumption-based environmental pressures.</p> <p><b>More advanced topics</b>, variables and analyses starting from the Leontief approach</p>

# Options for conceptual treatments: Terminology

Small	Medium (lagom)	Large
<b>No explicit explanation of terminology</b>	Explanation of <b>terminology for consumption-based environmental pressures including “crosswalks”</b> to relevant terms in SNA	

# Amendments to the SEEA CF text

- Proposal that new texts be consolidated in a new chapter/subchapter
- Also amendment of texts in current Ch. 3 where necessary to refer to new subchapter

# Thanks

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