

# Integration of EGSS and EPEA in the form of a supply and use table

Antti Hörkkö, September 12<sup>th</sup>, 2023,

29th meeting of the London Group on Environmental  
Accounting

# Background

- This presentation presents the results of the exercise carried out between 2021 and 2023 in the project entitled “Framework for monetary environmental accounts and pilot accounts on environmental subsidies and transfers”. The project was funded by Eurostat Grant.
- Our aim was to develop the monetary environmental accounts to be more connected to each other and improve coherence of the framework.
- We decided to explore the integration between the environmental goods and services sector (EGSS) and the environmental protection expenditure accounts (EPEA) in the frame of a supply and use table.
- The supply and use table of environmental protection services and products (EP-SUT) gave us a tool to investigate data gaps and inconsistencies between these accounts. We also applied these results to a Sankey diagram which illustrates the flows of environmental protection activities in the whole economy.



# The integration

- The integration was investigated **in the form of a supply and use table**. The transactions in the supply and use table were classified with the CEPA.
- Resource management activities (CReMA) were left out since the EPEA not cover those.
- **The EPEA and the EGSS are theoretically counterparts** to each other which means that same actions should be found from both accounts although under different transactions. In theory the EGSS covers supply and the EPEA use.
- The supply and use table of environmental protection services and products gave us a tool to study **data gaps and inconsistencies between monetary environmental accounts**.



# EGSS and EPEA in Finland

## EGGS

- Data from 2012 onwards
- Compilation:
  - NA, SUT (CPA-classes): output, gross value added, employment, exports
  - Business register, Industrial output statistics, International trade in goods and services, Foreign trade of goods (Customs): output, exports, (gross value added, employment)
  - Energy statistics, Finnish Energy Authority, Energy certification registry, Agricultural statistics (Natural Resources Institute), Environmental Insurance Centre: **data used in estimating the proportion of the environmental activities**
  - Data based on the expert views of the stakeholders: **used in estimating the proportion of the environmental activities**

## EPEA

- Data from 2014 onwards
- Compilation:
  - **Survey: Coverage: NACE Rev.2 classes 05 – 36 (Corporations)**
  - SUT (NACE Rev.2 classes 37 – 39)
  - Government budget data
  - Trade in Services statistics
  - Household Budget Survey

Both under: EU regulation  
on environmental economic  
accounts





# Model of supply and use table from previous studies



**Improve the quality and consistency of results in different modules in Environmental Accounts, in particular EPEA and EGSS.**

Grant agreement number – 05121.2017.002-2017.521

Project 1

Technical report, February 2019



# Environmental protection supply

- The biggest supply is in wastewater management followed by waste management.
- Building sewerage systems are reason behind large supply in construction industry (NACE F).
- Most of the output is captured in the table, but there is some shortage in the scientific and technical activities. Mainly because these corporations do other business as well.

Supply table for EP goods and services 2018 (million €)

million €	Output at basic (current) price											Imports	Taxes less subsidies on environmental products	Trade and transport margins	Total supply purchasers' prices	
	NACE A	NACE B	NACE C	NACE D	NACE E	NACE F	NACE G - I	NACE J - N	NACE O - Q	NACE R - U	Total output basic prices					
CEPA 1			73		40			190	0			303	111	17	26	456
CEPA 2			153		763	1984		187				3087	110	226	44	3467
CEPA 3			60		1305			663				2028	699	91	376	3194
CEPA 4	142				60							202	38	3	34	276
CEPA 5			11						0			11	30	10	8	59
CEPA 6									2			2	0	0	0	2
CEPA 7			6		320				94			420	168	16	89	692
CEPA 8&9					20			243	299	13		575	12	3	0	590
<b>Total</b>	<b>142</b>	<b>0</b>	<b>303</b>	<b>0</b>	<b>2508</b>	<b>1984</b>	<b>0</b>	<b>1283</b>	<b>395</b>	<b>13</b>		<b>6628</b>	<b>1168</b>	<b>365</b>	<b>577</b>	<b>8737</b>
	based mostly on EGSS					based mostly on EPEA			based mostly on SUT							

The supply table for environmental protection goods and service was mainly produced with the EGSS figures

Price components and imports are **estimated** based on national accounts supply and use tables in industry (division) level. Leaves big uncertainties.

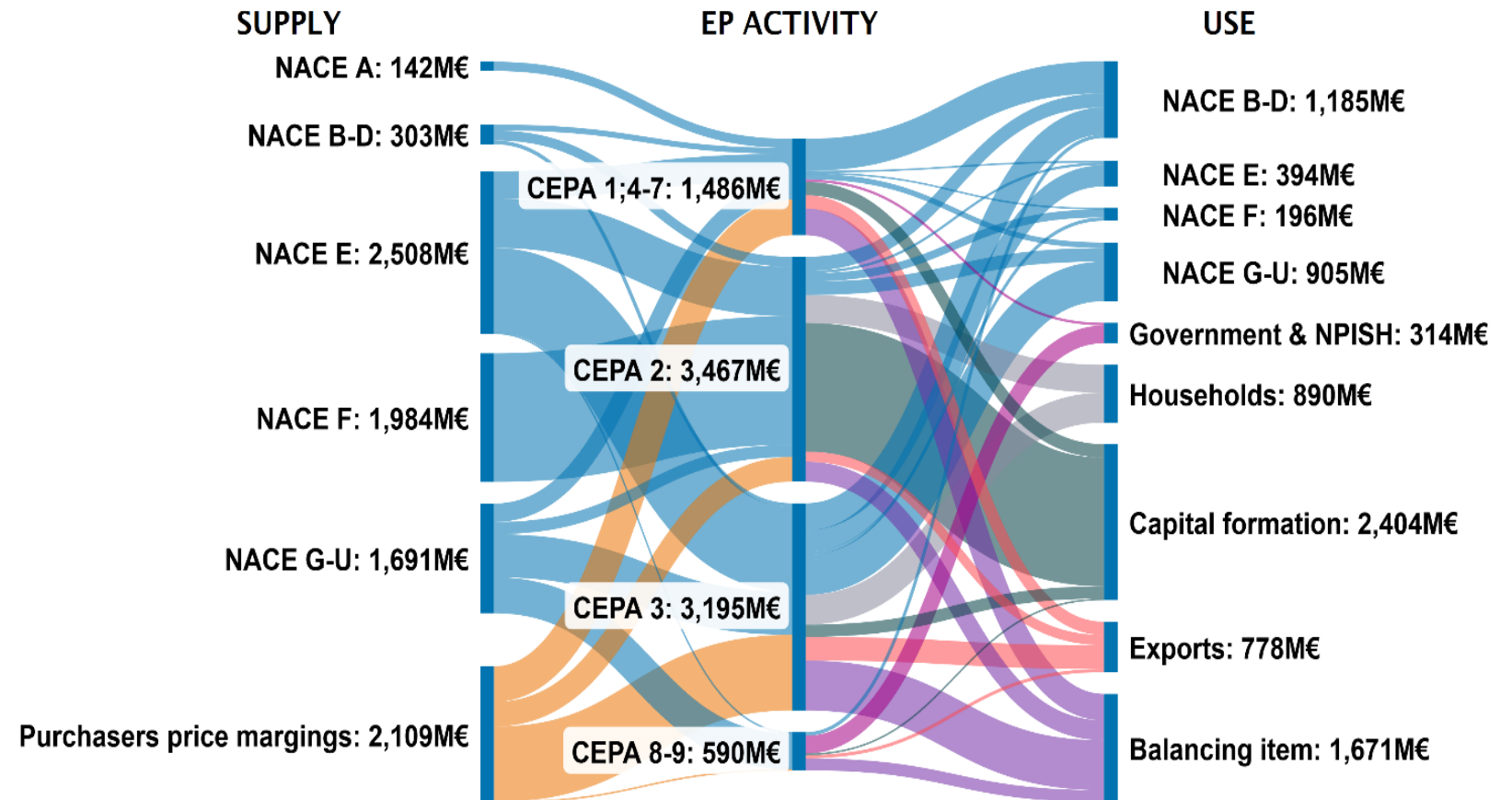




# Alternative illustration

- To understand flows between supply and use better, the Sankey diagram was proceeded from the EP-SUT
- Supply is linked to use via environmental protection activities
- Same services/products shown only once!

The Sankey diagram of Environmental Protection Supply and Use 2018



Purchaser price margins:

- Taxes less subsidies on environmental products
- Trade and transport margins
- Imports





# Data gaps and areas of development

- In the project, the categories were analysed one by one to find out reasons for unbalanced supply and use. Overall, same problems occurred in all the categories.
- All CEPA categories have unbalanced supply and use. The biggest data gaps were in CEPA2 (wastewater management) and CEPA3 (waste management). CEPA6 only with larger use than supply.
- On the use side, we did not have much knowledge about **industries outside the EPEA questionnaire** and all environmental protection products were not included in the EPEA.
- From the output perspective, it was difficult to recognize corporations working with these topics in scientific and technical activities since most of these **corporations do other business as well**
- Import and export of the EP-SUT were estimated from the total figures of the certain industries, and we found that this might not match well with environmental protection products and services which leaves uncertainty to our figures. Same with purchaser's price margins .



# Conclusions

1. Despite some shortcomings and differences in frameworks of the EPEA and the EGGS, **these accounts are suitable for supply and use table type of presentation.**
2. We believe that working with this type of table structure would ensure better integration between the accounts.
3. **Mainly positive feedback from the Sankey diagram**
4. In order to account for all environmental protection expenditures, it should be objective for the EPEA to add the missing products. Extending the EPEA framework to resource management would make the whole environmental monetary accounts framework more coherent.



# Discussion topics for the London Group

1. Do you agree that monetary environmental accounts should be developed to be more integrated than individual statistics (similar with NA)?
2. Which one is bigger issue from integration perspective? Missing products in the EPEA or missing resource management activities in the EPEA.
3. What you think about usefulness of supply-use table and Sankey diagram for environmental monetary accounts?

**All other questions/ comments are very welcome!**



Thank you

