

# **An integrated framework for environmental activity accounts**

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# The issue

- SEEA CF provides overall guidelines on definitions and classifications to be used....
- .... But the different modules (EPE, EGSS, transfers) differ in scope, valuation approach, coverage of activities, accounting framework etc.
- **Eurostat:** need for an integrated framework to unify concepts and terminology across the modules of the monetary environmental accounts
- **AIM OF THIS STUDY:** How does the integrated set of accounts look like (and can we fill it with data).

## Table 4.7 from SEEA CF: comparison between EPEA and EGSS

Area of difference	EPEA	EGSS
Accounting structure	Full functional account	Table of production related statistics
Coverage of environmental activities	Environmental protection characteristic activities	Production of goods services used for environmental protection and resource management
Coverage of goods and services	All environmental protection goods and services and expenditure on other goods and services for environmental protection purposes	All environmental protection and resource management goods and services
Coverage of environmental producers	Producers included only in relation to environmental protection specific services	Producers included in relation to all environmental goods and services
Valuation of adapted goods	Net/extra cost only	Full value (at basic prices)
Coverage relating to international trade	Imports included in aggregate measures of expenditure	Exports included in aggregate measures of production
Treatment of taxes and subsidies	Valuation of expenditure at purchasers' prices	Valuation of output at basic prices

# Eurostat: an integrated framework for monetary activity accounts

- **Clarify and unify terminology** across the modules of the monetary environmental accounts (MEA) by introducing a "one name for one definition" principle.
- **Clarify the relation between the MEA modules**, namely EPEA, EGSS, ReMEA, and environmental transfers.
- **Facilitate joint compilation of the MEA modules** by enhancing the streamlining of the modules production and thus increasing efficiency of production work in the statistical offices.
- Make it easier for newcomers to understand the linkages between the various MEA modules.

# Characteristic or non-characteristic activities

- Environmental activities that directly serve an environmental purpose are called **characteristic environmental activities**.
- Activities that produce specifically designed products whose use serves an environmental purpose are called **non-characteristic environmental activities**.



# Environmental products

- **Specific environmental products** would be all “primary purpose environmental products”.  
→ *characteristic (specific) environmental services and connected products.*
- **Cleaner and resource-efficient products** would be all “secondary purpose environmental products”.  
→ *adapted goods.*



# Characteristics of an integrated set of monetary activity accounts

- A **complete functional accounting structure**, directly based on the SNA
- A **full coverage of environmental products**
- Coverage of **all environmental economic activities**, i.e. environmental production, environmental accumulation and environmental consumption
- Coverage of **both** environmental protection (CEPA) and resource management (CReMA) activities
- Inclusion of **all relevant environmental transactions and transfers**
- Allow derivation of **key indicators**, including the key indicators for EPEA and EGSS





# Integrated set of monetary activity accounts

- A. Environmental production account
- B. Environmental expenditure account
- C. Supply and use tables for environmental products.

# Integrated set of monetary activity accounts

## No revolutionary new set of accounts!

- Based on the simplified EPE module developed by Eurostat
- Plus new terminology developed by Eurostat
- Plus broadening of the scope

# Environmental production account

	Characteristic activities		Non characteristic activities	Rest of the world	TOTAL
	Government	Corporations	Corporations		
		Primary and secondary activities	Own account producers		
1 Intermediate consumption [P2]					
2 specific environmental products					
3 cleaner and resource efficient products					
4 other products					
5 Value added					
6 Compensation of employees [D1]					
7 Taxes on production [D29]					
8 Subsidies on production [D39] (-)					
9 Consumption of fixed capital [K1]					
10 Net operating surplus					
<b>11 TOTAL environmental output (basic prices)</b>					
12 market output					
13 non market output					
14 Intermediate consumption of environment products (-)					
15 VAT and other taxes on environmental products [D221] (+)					
16 Subsidies on environmental products [D221] (-)					
17 Trade and transport margins					
18 imports of environmental goods and services (+)					
19 exports of environmental goods and services (-)					
<b>Total environmental output at purchasers' prices</b>					
<b>20 available for national uses</b>					
21 Extra costs correction (-)					
<b>22 Total environmental output at purchasers' prices</b>					



# Top part of the production account

	Characteristic activities		Non characteristic activities	Rest of the world	TOTAL
	Government	Corporations	Corporations		
		Principal and secondary activities	Own account activities		
1 Intermediate consumption [P2]					
2 specific environmental products					
3 cleaner and resource efficient products					
4 other products					
5 Value added					
6 Compensation of employees [D1]					
7 Taxes on production [D29]					
8 Subsidies on production [ D39] (-)					
9 Consumption of fixed capital [K1]					
10 Net operating surplus					
11 <b>TOTAL environmental output (basic prices)</b>					
12 market output					
13 non market output					

← EGSS

← EGSS

# Bottom part of the production account

	Characteristic activities		Non characteristic activities	Rest of the world	TOTAL
	Government	Corporations		Corporations	
		Principal and secondary activities	Own account activities		
<b>11 TOTAL environmental output (basic prices)</b>					
14 Intermediate consumption of environment products (-)					
15 VAT and other taxes on environmental products [D221] (+)					
16 Subsidies on environmental products [D221] (-)					
17 Trade and transport margins					
18 imports of environmental goods and services (+)					
19 exports of environmental goods and services (-)					
<b>Total environmental output at purchasers' prices available for national uses</b>					
21 Extra costs correction (-)					
<b>Total environmental output at purchasers' prices available for national uses: extra costs</b>					
<b>Supplementary items</b>					
23 Employment					

# Top part of expenditure account

	Corporations		Households	General government	NPISH	TOTAL
	Characteristic and non characteristic environmental producers					
	Primary and secondary activities	Own account producers	Other			
1 Intermediate consumption						
2 specific environmental products						
3 cleaner and resource efficient products						
4 Final consumption						
5 specific environmental products						
6 cleaner and resource efficient products						
7 Gross fixed capital formation						
8 specific environmental products						
9 cleaner and resource efficient products						
10 TOTAL domestic use of environmental products						



# Total expenditure account

	Corporations		Households	General government	NPISH	TOTAL
	Characteristic and non characteristic environmental producers					
	Primary and secondary activities	Own account producers	Other			
1 Intermediate consumption						
2 specific environmental products						
3 cleaner and resource efficient products						
4 Final consumption						
5 specific environmental products						
6 cleaner and resource efficient products						
7 Gross fixed capital formation						
8 specific environmental products						
9 cleaner and resource efficient products						
<b>10 TOTAL domestic use of environmental products</b>						
Gross fixed capital formation (non environmental) for						
11 characteristics activities						
Acquisition less disposals of non-financial, non-						
12 produced assets for the production of EP service (NP)						
13 Transfers not included in the total use of environmental products						
14 Environmental subsidies on products (D31)						
15 Transfers to the rest of the world (D7, D9)						
16 Transfers from the rest of the world (D7, D9) (-)						
<b>17 TOTAL national environmental expenditure</b>						
19 Environmental subsidies on production (D39)						
20 Social contributions and benefits (D6)						
21 Other current transfers (D7)						
22 Capital transfers (D9)						
23 Earmarked taxes (D2)						
<b>24 TOTAL national environmental expenditure</b>						

# Total domestic use of environmental products

	Corporations		Households	General government	NPISH	TOTAL
	Characteristic and non characteristic environmental producers	Other				
	Principal and secondary activities	Own account activities				
1 Intermediate consumption						
2 specific environmental products						
3 cleaner and resource efficient products						
4 Final consumption						
5 specific environmental products						
6 cleaner and resource efficient products						
7 Gross fixed capital formation						
8 specific environmental products						
9 cleaner and resource efficient products						
10 <b>TOTAL domestic use of environmental products</b>						



# Calculating National expenditure

	Corporations	Households	General government	NPISH	TOTAL
	Characteristic and non characteristic environmental producers	Other			
	Principal and secondary activities	Own account activities			
<b>10 TOTAL domestic use of environmental products</b>					
Gross fixed capital formation (non environmental) for 11 characteristics activities produced assets for the production of EP/RM/service 12 (NP)					
13 Transfers not included in the total use of environmental products					
14 Environmental subsidies on products (D31)					
15 Transfers to the rest of the world (D7, D9)					
16 Transfers from the rest of the world (D7, D9) (-)					
<b>17 TOTAL national environmental expenditure</b>					

# Financing environmental expenditure

	Corporations		Households	General government	NPISH	TOTAL
	Characteristic and non characteristic environmental producers					
	Primary and secondary activities	Own account producers	Other			
<b>17 TOTAL national environmental expenditure</b>						
18 Environmental subsidies on production (D39)						
19 Social contributions and benefits (D6)						
20 Other current transfers (D7)						
21 Capital transfers (D9)						
22 Earmarked taxes (D2)						
<b>23 TOTAL national environmental expenditure</b>						

# Supply table

Output at basic prices					Total output basic prices	Taxes less subsidies on products		Trade and transport margins	Output at purchasers' prices	Imports	Total supply
NACE A	NACE B	NACE C	NACE D	NACE ...		environ-mental	non environ-mental				
<b>Specific environmental products</b>											
characteristic activities											
CEPA 1											
CEPA....											
CreMA 1											
CreMA...											
non characteristic activities											
CEPA 1											
CEPA....											
CreMA 1											
CreMA...											
<b>Cleaner and resource efficient products</b>											
characteristic activities											
CEPA 1											
CEPA....											
CreMA 1											
CreMA...											
non characteristic activities											
CEPA 1											
CEPA....											
CreMA 1											
CreMA...											
<b>TOTAL</b>											



# Use table

	Intermediate consumption					Total intermediate consumption	Final consumption		Gross fixed capital formation	Exports	Total use
	NACE A	NACE B	NACE C	NACE D	NACE...		Government	Households			
<b>Specific environmental products</b>											
characteristic activities											
CEPA 1											
CEPA....											
CreMA 1											
CreMA...											
non characteristic activities											
CEPA 1											
CEPA....											
CreMA 1											
CreMA...											
<b>Cleaner and resource efficient products</b>											
characteristic activities											
CEPA 1											
CEPA....											
CreMA 1											
CreMA...											
non characteristic activities											
CEPA 1											
CEPA....											
CreMA 1											
CreMA...											
<b>TOTAL</b>											



# Conclusions: Advantages of applying an integrated approach

- **Accounting approach:** integrated data
- **Full consistency between modules.**
- **Coherent data** (with SNA).
- **Comprehensive data.** Applying this ensures full coverage of environmental activities and products.
- **Compiling efficiency:** Putting data into an integrated framework helps to compile the different modules more efficiently, as this ensures that data are not compiled twice.



**Thanks you for your attention!**



# Filling the tables with data



# Supply table

	Characteristic activities		Non characteristic activities		Taxes less subsidies on products	Trade and transport margins	Output at purchasers prices	imports	Total supply	
	own account									
	Government*	corporations	producers	corporations						
<b>Specific environmental products</b>										
CEPA	01	158	59	172	205	0	0	593	461	1054
	02	3327	2017	86	598	0	0	6029	254	6283
	03	2517	4811	29	209	-5	0	7561	186	7748
	04	244	689	50	126	0	0	1109	25	1134
	05	75	47	0	25	0	0	147	34	181
	06	494	36	0	0	0	0	529	6	535
	07	52	0	59	0	0	0	111	0	111
	08	56	0	0	0	0	0	56	0	56
	09	1310	867	74	189	0	0	2440	0	2440
CRIVA	10	1201	78	0	37	0	0	1317	0	1317
	11	2	1	0	0	0	0	4	0	4
	12	0	0	0	0	0	0	0	0	0
	13	90	5418	0	3461	0	0	8969	0	8969
	14	1	10	0	55	0	0	66	0	66
	15	0	0	0	0	0	0	0	0	0
	16	22	97	0	6	0	0	125	0	125
<b>Cleaner and resource efficient products</b>										
CEPA	01	0	0			0	0	0	0	0
	02	0	0			0	0	0	0	0
	03	357	3069			-1	127	3552	3133	6685
	04	0	596			0	0	596	0	596
	05	0	0			0	0	0	0	0
	06	0	0			0	0	0	0	0
	07	0	0			0	0	0	0	0
	08	0	0			0	0	0	0	0
	09	0	0			0	0	0	0	0
CRIVA	10	0	0			0	0	0	0	0
	11	0	0			0	0	0	0	0
	12	0	0			0	0	0	0	0
	13	1	2947			-520	132	2561	3322	5883
	14	0	1505			0	0	1505	17	1522
	15	0	0			0	0	0	0	0
	16	0	0			0	0	0	0	0
<b>TOTAL</b>		9907	22250	470	4911	-526	259	37272	7439	44711





# Use table

	Intermediate consumption		Final consumption		Gross fixed capital formation	exports	Total use		
	own account								
	characteristic	producers	other corpora	government	Households				
<b>specific environmental products</b>									
CEPA	01	4	172	42	151	0	561	124	1054
	02	878	86	641	3038	0	1246	394	6283
	03	3081	29	2150	4	1554	688	242	7748
	04	362	50	235	224	0	162	103	1134
	05	2	0	35	71	0	46	27	181
	06	7	0	39	472	0	7	10	535
	07	0	59	0	52	0	0	0	111
	08	0	0	1	55	0	0	0	56
	09	117	74	649	949	172	175	272	2407
CReVA	10	21	0	13	1201	0	59	24	1319
	11	0	0	1	2	0	0	0	4
	12	0	0	0	0	0	0	0	0
	13	2116	0	1405	90	2610	1350	1505	9077
	14	2	0	3	1	0	5	30	42
	15	0	0	0	0	0	0	0	0
	16	19	0	30	3	19	54	17	142
<b>cleaner and resource efficient products</b>									
CEPA	01			0	0	0	0	0	0
	02			0	0	0	0	0	0
	03	716		1129	0	0	4	4836	6685
	04			391	0	98	0	108	596
	05			0	0	0	0	0	0
	06			0	0	0	0	0	0
	07			0	0	0	0	0	0
	08			0	0	0	0	0	0
	09			0	0	0	0	0	0
CReVA	10			0	0	0	0	0	0
	11			0	0	0	0	0	0
	12			0	0	0	0	0	0
	13			1799	0	343	131	3611	5883
	14			1204	0	174	0	144	1522
	15			0	0	0	0	0	0
	16			0	0	0	0	0	0
<b>specific environmental products</b>		6608	470	5244	6312	4355	4354	2750	30093
<b>cleaner and resource efficient products</b>		716	0	4523	0	615	135	8698	14687
<b>TOTAL</b>		7324	470	9767	6312	4970	4489	11448	44779

# Production account

	Characteristic activities		Non characteristic activities Corporations	Rest of the world	TOTAL
	Government	Corporations			
		Primary and secondary activities	Own account producers		
Intermediate consumption [P2]	4679	12509	0	3683	20871
specific environmental products	2029	4589	0	0	6618
cleaner and resource efficient products	0	716	0	0	716
other products	2650	7204	0	3683	13537
Value added	5227	10207	0	1228	16662
Compensation of employees [D1]	2494	5236	141	734	8604
Taxes on production [D29]	86	105	0	6	197
Subsidies on production [ D39] (-)	-1	-701	0	-12	-715
Consumption of fixed capital [K1]	2336	2887	329	205	5757
Net operating surplus	330	2305	0	296	2932
<b>TOTAL environmental output (basic proces)</b>	<b>9906</b>	<b>22251</b>	<b>470</b>	<b>4911</b>	<b>37538</b>
market output	3642	22251		4911	30805
non market output	6263	0	470	0	6733
Intermediate consumption of environment pr	2029	5305	0	0	7334
VAT and other taxes on environmental products [D221] (+)		174			174
Subsidies on environmental products [D221] (-)		694			694
Trade and transport margins		259			259
imports of environmental goods and services (+)				7439	7439
exports of environmental goods and services (-)				11448	11448
<b>Environmental output at purchasers' prices available for national uses</b>	<b>7876</b>	<b>16686</b>	<b>470</b>	<b>4911</b>	<b>25934</b>
Extra costs correction (-)					-155
<b>Environmental output at purchasers' prices available for national uses: extra costs</b>					<b>25779</b>



# Expenditure account

	Corporations		Households	General government	NPISH	TOTAL
	Characteristic and non characteristic environmental producers					
	Primary and secondary activities	Own account producers	Other			
Intermediate consumption						
specific environmental products		470	5244			5714
cleaner and resource efficient products			4523			4523
Final consumption						
specific environmental products				4355	6312	10667
cleaner and resource efficient products				615	0	615
Gross fixed capital formation						
specific environmental products	1350	160	1731		900	4141
cleaner and resource efficient products		58	135			193
<b>TOTAL domestic use of environmental products</b>	<b>1350</b>	<b>688</b>	<b>11632</b>	<b>4970</b>	<b>7212</b>	<b>0</b> <b>25852</b>
Gross fixed capital formation (non environmental) f	508				1345	1853
Acquisition less disposals of non-financial, non-produced assets for the production of EP service					159	36 195
Transfers not included in the total use of environmental products						
environmental subsidies on products (D31)					694	694
Transfers to the rest of the world (D7, D9)					325	325
Transfers from the rest of the world (D7, D9) (-)						
<b>TOTAL national environmental expenditure</b>	<b>1858</b>	<b>688</b>	<b>11632</b>	<b>4970</b>	<b>9735</b>	<b>36</b> <b>28919</b>
environmental subsidies on production (D39)			-265		265	0
Social contributions and benefits (D6)				0	0	0
Other current transfers (D7)					0	0
Capital transfers (D9)			-39	-30	69	0
earmarked taxes (D2)			620	2026	-2646	0
<b>TOTAL national environmental expenditure</b>	<b>1858</b>	<b>688</b>	<b>11948</b>	<b>6966</b>	<b>7423</b>	<b>36</b> <b>28919</b>



# Why supply and use tables ?

- They **integrate monetary environmental activity data into an accounting framework using the supply and use identity**. This is done on a product level, which is not done in the production and expenditure account.
- They present a **transition table** that allow identification of the data that are needed for the bottom part of the production table to go from output at basic prices to environmental output at purchasers' prices available for national uses.
- They provide **extra information** that cannot be derived from the production and expenditure account.
- When the supply and use tables are constructed first, **they make it much easier** to compile the production and expenditure account.

