



System of
Environmental
Economic
Accounting

COMBINED PRESENTATIONS

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United Nations

The image shows a slide with a white background. In the top left corner, there is a small version of the blue flower logo and the text "System of Environmental Economic Accounting". The main body of the slide is a large blue rectangle with a white border. Inside this rectangle, the text "COMBINED PRESENTATIONS" is written in large, white, bold, sans-serif capital letters. Below this, the name "Marko Javorsek" and "United Nations Statistics Division" are written in white, sans-serif font. Further down, the dates and location "15-18 January 2018, Minsk, Belarus" are also in white, sans-serif font. At the bottom center of the slide, there is a small United Nations logo and the text "United Nations".

Content

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- Key areas of integration
- Combined presentations
 - > Monetary and physical supply and use
 - > Asset accounts and supply and use
- Exercise – Combined presentation for water



Integrating information with SEEA

- A primary motivation for SEEA-CF is effective integration of environmental and economic data
- Various SEEA-CF accounts capture different types of information
- Need to understand how the information in these accounts link together into one integrated system of information
- A key **strength of the SEEA** is the consistent application of accounting rules, principles and boundaries in the organization of physical and monetary information



Four key areas of integration

1. Linking flows of goods and services in physical and monetary terms
2. Linking changes in the stock of environmental assets with use of extracted natural resources as inputs to economic production, consumption and accumulation.
3. Connecting the measures of production, consumption and accumulation in monetary terms and measures of flows of income between sectors
4. Identifying specific economic activities undertaken for environmental protection or resource management purposes



Integrating physical & monetary SUT

Supply table in monetary terms						
	Production --Industries (ISIC)--				Rest of the world	
Products	OUTPUT				IMPORTS	
Use table in monetary terms						
	Int. Consumption --Industries (ISIC)--	Final Consumption Households	Governments	Accumulation	Rest of the world	
Products	INTERMEDIATE CONSUMPTION	FINAL CONSUMPTION EXPENDITURE		GCF	EXPORTS	
Supply table in physical terms						
	Production ; Generation of Residuals -- Industries (ISIC) --	Households		Accumulation	Rest of the world	From the environment
Natural Inputs						FLOW FROM ENVIRONMENT
Products	OUTPUT				IMPORTS	
Residuals	RESIDUALS GENERATED	RESIDUALS GENERATED		LANDFILL / SCRAPPING	RESIDUALS RECEIVED	RESIDUALS RECOVERED
Use table in physical terms						
	Int. Consumption; Use of natural inputs; collection of residuals --Industries (ISIC)--	Household Final Consumption		Accumulation	Rest of the world	To the environment
Natural Inputs	EXTRACTION FROM ENVIRONMENT					
Products	INTERMEDIATE CONSUMPTION	FINAL CONSUMPTION		GCF		
Residuals	COLLECTION/TREATMENT OF RESIDUALS			LANDFILL	RESIDUALS SENT	RESIDUALS TO ENVIRONMENT

Same product classification



Same groupings of economic units

Integrating physical & monetary SUT

↓ Accumulation Column
↓ Environment Column

Supply table in monetary terms						
	<i>Production --Industries (ISIC)--</i>				<i>Rest of the world</i>	
Products	OUTPUT				IMPORTS	
Use table in monetary terms						
	<i>Int. Consumption-- Industries (ISIC)--</i>	<i>Final Consumption Households</i>	<i>Final Consumption Governments</i>	<i>Accumulation</i>	<i>Rest of the world</i>	
Products	INTERMEDIATE CONSUMPTION	FINAL CONSUMPTION EXPENDITURE		GCF	EXPORTS	
Supply table in physical terms						
	<i>Production / Generation of Residuals --Industries (ISIC)--</i>			<i>Accumulation</i>	<i>Rest of the world</i>	<i>From the environment</i>
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Natural Inputs	EXTRACTION FROM ENVIRONMENT					
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Connecting asset accounts and SUT

		Asset accounts (Physical and monetary terms)					
		Industries	Households	Government	Rest of the world	Produced assets	Environmental assets
						Opening stock	Opening stock
Monetary supply and use table	Product-supply	Output			Imports	Gross capital	
	Product-use	Intermediate consumption	Household final consumption expenditures	Government final consumption expenditures	Exports	Gross capital formation	
Physical supply and use table	Natural Inputs-supply						Extracted natural resources
	Natural Inputs-use	Inputs of natural resources					
	Product-supply	Output			Imports	Gross capital formation	
	Product-use	Intermediate consumption	Household final consumption		Exports	Residuals from scrapping and demolition of produced assets; emissions from controlled landfills	Residuals flowing to the environment*
	Residuals-supply	Residuals generated by industry	Residuals generated by household final consumption		Residuals received from the rest of the world	Accumulation of waste in controlled landfills	
	Residuals-use	Collection and treatment of waste and other residuals			Residuals sent to the rest of the world	Other changes in volume of assets (e.g., natural growth, discoveries, catastrophic losses)	
						Revaluations	
						Closing stock	

Technical Notes

- Set of seven technical notes on specific modules
 - › EGSS, EPEA, MFA, Air Emissions, Water, Energy and Forest
- Core accounts: simplified version of the SEEA CF tables – a minimum set
- **Combined presentation tables:** Key information in one table for dissemination and calculation of indicators
- Compilation guidance



Combined presentation for energy



	Industries (by ISIC)					Total Industry	Rest of the World	Final Consumption Households	TOTAL	
	Agriculture, Forestry & Fishery	Mining & Quarrying	Manufacturing	Electricity, gas, steam & air conditioning supply	Transportation & Storage					Other Industries
	(ISIC A)	(ISIC B)	(ISIC C)	(ISIC D)	(ISIC H)					
1. Supply of energy and non-energy products (currency):										
Total energy products	113	17203	6322	19403		43041	43375		86416	
Total (energy & non-energy products)	59780	72649	38298	39745	304401	660840	7123543			
2. Intermediate consumption and final use (currency):										
Total energy products	10081	24519	20512	8726	14293	256077	334208	63362	397570	
Total (energy & non-energy products)	51121	62143	32742	18358	269338	5869950	6303652	491935	6795587	
3. Gross value added (currency)	8659	10526	5546	21407	35063	738690	818991		819891	
4. Employment (thousands)	145	148	78	165	374	9921	10831		10831	
5. Total energy from natural inputs (from the environment) (PJ)										
of which: from renewable sources										
6. Supply of energy products (PJ):										
Coal							225		225	
Peat and peat products										
Oil shale / oil sands										
Natural gas			395		369		764		1528	
Oil			721	347			1068	930	3056	
Biofuels		5			2		7		14	
Waste		39		55			94	17	305	
Electricity					212		212	22	446	
Heat					79		79		158	
Nuclear fuels and other fuels										
7. End use of energy products (PJ):										
Coal	2		17				20	2	42	
Peat and peat products										
Oil shale / oil sands										
Natural gas	2		39			12	53	201	26	
Oil	34	2	326		621	49	1032	441	102	
Biofuels				2			2		5	
Waste	3		4	37		1	45	1	33	
Electricity	7	1	22	50	10	15	105	100	29	
Heat				11	2	1	19	35	44	
Nuclear fuels and other fuels										
8. Net domestic energy use (PJ)										
9. Closing stocks of natural energy resources (currency: Class A)		111750								
10. Closing stocks of natural energy resources (PJ: Class A)		24000								
11. Depletion of natural energy resources (PJ)		1161								
12. Gross fixed capital formation for energy extraction and supply (currency)		27030		4230						

Exercise on the combined presentation for water



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Goal 6-Targets and indicators

Target	Indicator
6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	6.3.1 Proportion of wastewater safely treated 6.3.2 Proportion of bodies of water with good ambient water quality
6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	6.4.1 Change in water-use efficiency over time 6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources



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Combined presentation for water



	Industries (by ISIC)						Total Industry	Rest of the World	Actual Final Consumption		TOTAL	
	Agriculture, Forestry & Fishery	Mining and Quarrying	Manufacturing	Electricity, gas, steam & air conditioning supply	Water collection, treatment & supply	Sewerage			Other Industries	Households		Government
	(ISIC A)	(ISIC B)	(ISIC C)	(ISIC D)	(ISIC 36)	(ISIC 37)						
1. Intermediate Consumption and Final Use (currency):												
Natural Water (CPC 1800)	406	193	450	88	1 004	100	1 229	3 470	4	3 074	60	6 008
Sewerage Services (CPC 941)	3	69	160	1	13	1	1 406	1 653	3	3 316	66	5 038
Other Products	145 597	38 454	89 727	180 683	2 360	1 718	5 842 990	6 301 529		605 817	50 096	6 957 442
2. Gross Value Added (currency)	24 731	42 327	98 763	14 997	3 193	3 217	632 663	819 891				819 891
3. Employment	371	663	1 548	61	41	43	8 204	10 931				10 931
4. Supply of water (million m3):												
Distribution of abstracted water	0	0	0	0	378	0	0	378	0			378
Wastewater to treatment	18	35	82	6	1	0	49	192	0	236		427
Total return flows of water	65	9	21	400	47	484	1	1 026		5		1 031
5. Use of Water (million m3):												
Total Abstraction of water	108	34	80	404	440	100	2	1 169				1 169
of which: Own use of abstracted water	108	34	80	404	3	100	2	733		11		744
Use of distributed water*	51	26	60	4	0	0	51	191	0	240		431
TOTAL USE OF WATER*	159	60	140	408	3	100	53	924		251		1 175
6. Water Consumption (million m3)	76	13	30	3	2	1	4	128		10		138
7. Total Actual Renewable Water Resources (TARWR) (million m3)												
8. Gross fixed capital formation (currency):												
For water supply	582	3	13	819	2 872			4 289				4 289
For water sanitation						2 874		2 874				2 874
9. Closing stocks of fixed assets for water supply (currency)	6 112	13	71	9 871	25 347		17	41 431				41 431
10. Closing stocks of fixed assets for water sanitation (currency)						37 457		37 457		10		37 467

* Includes re-used water (distributed re-use) and excludes wastewater received (for treatment)



Group work questions

Environmental accountants should not only compile the accounts, they should also be able to present the data to users:

- Please assess the core table for water. Evaluate the main information that can be derived from the table
- Work in a group and discuss:
 - What are the most important messages you deduce from this data?
 - Indicator 6.3.1—In practical terms, the numerator is the amount of wastewater treated while the denominator is the total return flows. How can this be calculated from the information we have?
 - Indicator 6.4.1—How can the accounts be used to calculate this indicator? What would be the value added of time-series data?



Indicator 6.3.1

- “Proportion of wastewater safely treated”

$$\text{Indicator 6.3.1} = \frac{\text{Total return flows after treatment}}{\text{Total wastewater sent to sewerage industry}}$$

- Numerator and denominator come from the combined presentation
 - > Numerator is wastewater sent to treatment = 427
 - > Denominator is total return flow =1031
- Indicator value is 0.415
- Can be done by industry



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Indicator 6.4.1

- “Change in water-use efficiency over time”

$$\text{Indicator 6.4.1 (productivity)} = \frac{\text{value of economic output}}{\text{total water use}}$$

- > Numerator comes from national accounts (gross value added) but included in combined presentation
- > Denominator comes from combined presentation: total use of water by each sector of the economy (including reused water)
- Importance of timeseries

	ISIC A	ISIC B	ISIC C	ISIC D	ISIC 36	ISIC 37	Other Industries	Total Industry
Gross Value Added	24,731	42,327	98,763	14,997	3,193	3,217	632,663	819,891
Water Use	159	60	140	408	3	100	53	924
Water productivity	155	704	704	37	1,030	32	11,848	887

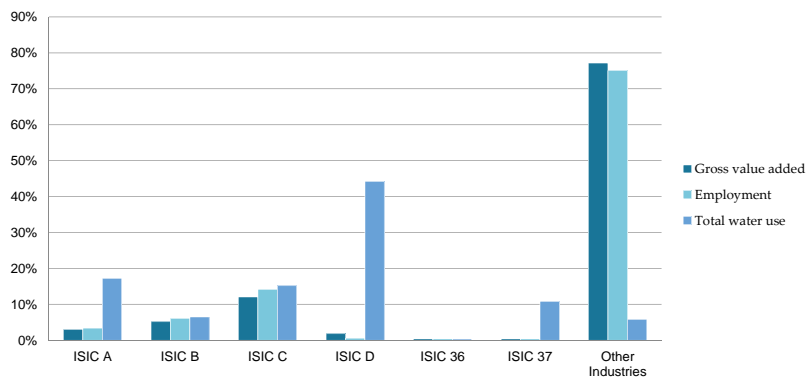


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Key information for water



Sector shares in GDP, employment and total water use



THANK YOU

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