

# **PAWA – Pilot Arno Water Accounts**

Training session on SEEA-W  
System of Environmental-Economic Accounting for Water

## **Data needs and collection process**

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# 3 main SEEA-W tables to be filled-in

Physical use table										Millions m <sup>3</sup>		
	Industry (by ISIC categories)						Total	Household	Rest of the world	Total		
	1000	05-32, 41-43	35	36	37	38-39, 45-89						
From the environment	<b>1. Total abstraction</b> (1.1+1.2+1.3)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1.a. Abstraction for own use	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	Agriculture/primary production									0.0		
	Industry									0.0		
	Household									0.0		
	Cooling water									0.0		
	Other									0.0		
	1.b. Abstraction for distribution									0.0		
	1.c. From water resources	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1.c.1 Surface water									0.0		
	1.c.2 Groundwater									0.0		
	1.c.3 Soil water									0.0		
	1.d. From other sources		0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0		
1.d.1 Collection of precipitation							1.0	1.0	1.0			
1.d.2 Application from the sea									0.0			
Within the economy	<b>2. Use of water received from other economic units</b>						0.0	0.0	0.0			
	2.a. Recycled water						0.0	0.0	0.0			
	<b>3. Total use of water</b> (1+2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

  

Physical supply table										Millions m <sup>3</sup>		
	Industry (by ISIC categories)						Total	Household	Rest of the world	Total		
	1000	05-32, 41-43	35	36	37	38-39, 45-89						
Within the economy	<b>4. Supply of water to other economic units</b>						0.0	0.0	0.0			
	4.a. Recycled water						0.0	0.0	0.0			
	4.c. Desalinated water						0.0	0.0	0.0			
	4.b. Water used to generate						0.0	0.0	0.0			
To the environment	<b>5. Total returns</b> (5.1+5.2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
	Agriculture/primary production								0.0			
	Industry								0.0			
	Water use								0.0			
	Household								0.0			
	Cooling water								0.0			
	2.a. From water resources								0.0			
	2.a.1 Surface water								0.0			
	2.a.2 Groundwater								0.0			
	2.a.3 Soil water								0.0			
	2.a.4 To other sources (e.g. sea water)								0.0			
	5.a. To water resources	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
	5.a.1 Surface water								0.0			
5.a.2 Groundwater								0.0				
5.a.3 Soil water								0.0				
5.a.4 To other sources (e.g. sea water)								0.0				
	<b>6. Total supply of water</b> (4+5)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
	<b>7. Consumption</b> (1-5)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

- Physical supply & use table

## Asset accounts

	Millions cubic metres						
	EA.131 Surface water				EA.132 Groundwater	EA.133 Soil water	Total
	EA.1311 Artificial Reservoirs	EA.1312 Lakes	EA.1313 Rivers	EA.1314 Snow, ice and Glaciers			
<b>1. Opening Stocks</b>							
Increases in stocks							
<b>2. Returns from the economy</b>							
<b>3. Precipitation</b>							
<b>4. Inflows</b>	0	0	0		0	0	0
4.a. from upstream territories							0
4.b. from other resources in the territory							0
<b>Decreases in stocks</b>							
<b>5. Abstraction</b>							0
<b>6. Evaporation/Actual evapotranspiration</b>							0
<b>7. Outflows</b>	0	0	0	0	0	0	0
7.a to downstream territories							0
7.b to the sea							0
7.c to other resources in the territory							0
<b>8. Other changes in volume</b>							0
<b>9. Closing Stocks</b>							0

- Assets accounts table

## Matrix of flows within the environment

	Millions cubic metres						
	EA.131 Surface water				EA.132 Groundwater	EA.133 Soil water	Outflows to other resources in the territory
	EA.1311 Artificial Reservoirs	EA.1312 Lakes	EA.1313 Rivers	EA.1314 Snow, ice and Glaciers			
EA.1311 Artificial Reservoirs							0
EA.1312 Lakes							0
EA.1313 Rivers							0
EA.1314 Snow, ice and Glaciers							0
EA.132 Groundwater							0
EA.133 Soil water							0
Inflows from other resources in the territory	0	0	0	0	0	0	0

- Matrix of flows between water resources

# Data needs

- Reference systems that defines the statistical units and the territories of references
- Time range:
  - Monthly data
  - Period: 1999-2013
- Climatic data sets
- River discharge
- Water abstractions, uses and returns

# Climatic data sets

- rain fall,
- actual and potential evaporation
- soil water (as control)
- effective rainfall (= likely run-off to surface and ground water)
- snow and ice cover (if relevant and possible)

# River discharge

- Most objective data sets
  - Being in principle fully documented by observations
- Inflow and outflow for a considered territory
- Express the final balance (in principle after abstractions and returns and considering lake and reservoir storage).

# Water abstractions, uses and returns

- 4 sub-groups and clustered under the NACE / ISIC
  - Urban and domestic uses
  - Industrial (good production) uses
  - Energy (cooling, and where possible turbining)
  - Agricultural uses:
    - rain fed agriculture (this is direct use of natural resource)
    - irrigation (that is abstraction from natural/artificial) sources

# Describing available datasets

	Type	Parameter	Data source	Location (web-site)	Temporal scale (monthly)	Temporal extend	Physical scale	Comments
Water use table (A TableIII.3)	Water use	<u>Abstraction</u> from inland water resources: <b>surface water</b>	Agriculture, farming					Specify which purpose: distribution or own use
			Electricity					
			Water collection, purification and supply					
			Sewerage, waste collection, treatment, disposal and remediation activities					
			Other services					

- Quick review of dataset availability during the workshop
- Full inventory in a metadata catalogue
- Data set access for download (protected when necessary):
  - URL
  - PAWA FTP repository

# Data sets available for Assets accounts

<b>Asset accounts</b>							
	Millions cubic metres						
	EA.131 Surface water				EA.132 Groundwater	EA.133 Soil water	Total
	EA.1311 Artificial Reservoirs	EA.1312 Lakes	EA.1313 Rivers	EA.1314 Snow, Ice and Glaciers			
1. Opening Stocks							
Increases in stocks							
2. Returns from the economy							
3. Precipitation							
4. Inflows	0	0	0		0	0	0
4. a. from upstream territories							0
4. b. from other resources in the territory							0
Decreases in stocks							
5. Abstraction							0
6. Evaporation/Actual evapotranspiration							0
7. Outflows	0	0	0	0	0	0	0
7. a to downstream territories							0
7. b to the sea							0
7. c to other resources in the territory							0
8. Other changes in volume							0
9. Closing Stocks							



# Data sets available for flows between water resources

<b>Matrix of flows within the environment</b>							
<i>Millions cubic metres</i>							
	EA.131 Surface water				EA.132 Groundwater	EA.133 Soil water	Outflows to other resources in the territory
	EA.1311 Artificial Reservoirs	EA.1312 Lakes	EA.1313 Rivers	EA.1314 Snow, Ice and Glaciers			
EA.1311 Artificial Reservoirs							0
EA.1312 Lakes							0
EA.1313 Rivers							0
EA.1314 Snow, Ice and Glaciers							0
EA.132 Groundwater							0
EA.133 Soil water							0
Inflows from other resources in the territory	0	0	0	0	0	0	0



# Data sets available for Physical supply

Physical supply table

		Industries (by ISIC categories)							Household	Rest of the world	Total
		01-03	05-33, 41-43	35	36	37	38,39, 45-99	Total			
Within the economy	<b>4. Supply of water to other economic units</b>							<b>0.0</b>			<b>0.0</b>
	<i>of which:</i>										
	4.a. Reused water							<b>0.0</b>			<b>0.0</b>
	4.c. Desalinated water							<b>0.0</b>			<b>0.0</b>
	4.b. Wastewater to sewerage							<b>0.0</b>			<b>0.0</b>
To the environment	<b>5. Total returns (=5.a+5.b)</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>			<b>0.0</b>
	<i>Hydroelectric power generation</i>							<i>0.0</i>			<i>0.0</i>
	<i>Irrigation water</i>							<i>0.0</i>			<i>0.0</i>
	<i>Mine water</i>							<i>0.0</i>			<i>0.0</i>
	<i>Urban runoff</i>							<i>0.0</i>			<i>0.0</i>
	<i>Cooling water</i>							<i>0.0</i>			<i>0.0</i>
	<i>Losses in distribution because of leakages</i>							<i>0.0</i>			<i>0.0</i>
	<i>Treated wastewater</i>							<i>0.0</i>			<i>0.0</i>
	<i>Other</i>							<i>0.0</i>			<i>0.0</i>
	5.a. To water resources	0.0	0.0	0.0	0.0	0.0	0.0	<b>0.0</b>	0.0		<b>0.0</b>
	5.a.1. Surface water							<b>0.0</b>			<b>0.0</b>
	5.a.2. Groundwater							<b>0.0</b>			<b>0.0</b>
	5.a.3. Soil water							<b>0.0</b>			<b>0.0</b>
5.b. To other sources (e.g. sea water)							<b>0.0</b>			<b>0.0</b>	
<b>6. Total supply of water (=4+5)</b>		<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>		<b>0.0</b>
<b>7. Consumption (=3-6)</b>		<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>		<b>0.0</b>
<i>of which:</i>											
7.a. Losses in distribution not because of leakages					0.5						

## SEEA-W useful links

- Water accounts on UN Statistic Division home page:
  - <http://unstats.un.org/unsd/envaccounting/water.asp>
  -
- Water balances and water resources management targets (DG Env)
  - <http://ec.europa.eu/environment/water/blueprint/balances.htm>
- Results and lessons from implementing the Water Assets Accounts (EEA)
  - <http://www.eea.europa.eu/publications/water-assets-accounts-report>

**Thank you for your kind attention!**

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