#### Water accounting at the EEA

#### Relations with BP 2012

#### Inputs for revised indicators



### Presentation outline:

- Water accounting:
  - Water balances
  - Indicators
  - Contextual support to assessments
- DG Env. developments in relation with Water Accounts (WA) and Blueprint (BP) 2012
- EEA support to DG Environment and related development in data collection and processing issues
- Ecrins improvements to ease the transfer of reporting on MS GIS to Ecrins



# Accounting conceptual model applied to water assets accounts and data issues





# The SEEAW components: mimicking the hydrological cycle and human uses



- The scope of WAA (water assets accounts) is to compute top system and the exchanges inside top system and between top system and the uses as in bottom system.
- The economic exchanges between uses (e.g. industry sells water to agriculture) are beyond our current scope
- Key issues are defining proper "territories of reference", their interconnections and populate with reliable and relevant data



#### Data categorisation & hierarchy







#### Area of computed pilot Water Accounts

- Has been defined by the most limiting irreplaceable data: run-off.
- Climatic data, thanks to MARS (JRC climatic data) was available across the EEA area;
- Data sources for the pilot project:
  - energy plants (consultant)
  - industry (derived from data in PRTR by consultant)
  - Irrigation (EEA and JRC inputs)
  - Urban uses (LandScan populations)

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• Appropriate data collection is being built with the ETC/ICM



### Sample results: assets and exchanges

	Basin	WFD0000001 : Loire, Brittany 🖵	Vendee coastal w	/aters					
	Year	2,005 🖵							
	Month	(AII)							
	Table 6.1: Assets		To	$\rightarrow$					
	Total vol (hm3)	То 💌							
From	From	1311 : Reservoirs	1312 : Lakes	1313 : Rivers	1314 : Glaciers,	132 :	133 : Soil ¥ater	Total	
		44.204.2	024.0		snow and ice	Groundwater	40.405.0	00.541.0	
	1 : Opening Stocks	-11,394.3	-931.0	-111,050.3	8,986.9	5,441.9	10,405.8	-98,541.0	
	2 : Returns	18.0	9.7	1,034,2			18.2	1,080.2	
	3 : Precipitations	194.3	82.2	139.0	1,324.2		91,459.8	93,199.5	
	4b : Inflows from resource	19,216.3	22,387.0	53,869.4		8,298.2		103,771.0	
	5 : Abstractions	-1,018.2	-116.0	-791.9		-3,728.3		-5,654.4	
	6 : Evaporation / Actual E	-317.4	-129.6	-213.8			-66,623.7	-67,284.5	
	7b : Outflows to the sea			-21,993.4				-21,993.4	
	7c : Outflows to other res	-19,858.6	-22,542.5	-39,285.8			-22,084.1	-103,771.0	
	Total	-13,159.9	-1,240.1	-118,292.4	10,311.1	10,011.8	13,176.0	-99,193.5	
	Basin	WFD0000001 : Loire, Brittany and -T	ndee coastal wate	rs					
	Year	2005							
	Month	(AII) 💌							
	Table 6.2: Flows between	resources							
	Total vol (hm3)	To							
(	From	1311-Reservoirs	1312:Lakes	1313:Rivers	132:Groundwater	Inflows			
\	1311.Reservoirs		477.0	19,381.6		19,858.6			
	1312:Lakes	1,840.5		20,701.9		22,542.5			
	1313:Rivers	17,375.8	21,910.0			39,285.8			
	133:Soil Water			13,785.9	8,298.2	22,084.1			
	Inflows	19,216.3	22,387.0	53,869.4	8,298.2	103,771.0			



## Sample results: supply, uses and returns

Basin	WFD000001	: Loire, Brittany and 🎹	ndee coastal wate	rs	
Year	(AII)				
Month	(AII)				
WaterAsset	5 : Abstraction	ns 🖃			
	$\frown$				
T <del>ota</del> l Vol (hm3)	(To)	<b>•</b>			
From	A . Agricultu	re, Forestry and	C : Electricity,	D : Vater	Total
	Fishing		gas, steam and	collection,	
			air conditioning	treatment and	
1311:Reservoirs		807.4		210.8	1,018.2
1312:Lakes		89.7		26.3	116.0
1313:Rivers		269.1	470.0	52.7	791.9
132:Groundwater		3,139.7		588.6	3,728.3
Total		4,305.9	470.0	878.4	5,654.4
Pacia	WED000001	Loire Brittony and T	odoo coostal wata		
Vear	(AII)	. corre, brittany and	nuee coastal wate	15	
Month	(AII)	-			
WaterAsset	2 · Poturor	· · · · · · · · · · · · · · · · · · ·			
WaterAsset	2. Neturns				
Total Vol (hm3)	From ->				
rotar vor(mil)	C · Electricit	uas steam and air	F · Sewerage	H · Households	Total
То		supply	2. ot attage		- otur
1311:Reservoirs			14.4	3.6	18.0
1312:Lakes			7.7	1.9	9.7
1313:Rivers		454.1	464.0	116.1	1,034.3
133:Soil Water			14.6	3.7	18.2
Total		454.1	500.8	125.3	1,080.2



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# Key outcomes from the accounting exercise

- Strong fostering for creating operational reference system (e.g. Ecrins) to host monitoring and process to computations,
- Determining incentive to structure data sets and revise dataflows (collecting "essential data", finding models and technical coeffcients to model replaceable data);
- Provide sound platform for comparing information from different source (does rain match run-off?, etc.)



### Insights to indicators

- Indicator should provide constrasted figures in contrasted situations;
- Message must be clear
- Elements should be fully defined and consistent
- Example: Water Exploitation Index
  - Exploitation/resource (what is exploitation, what is resource?
  - Contrasted situation yield same figure: yearly average (current rule) is constant, quadratic average of monthly ratios more explicit.
- Detailed database may provide comparative insights



### WEI in contrasted situations



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# DG Environment: WA, BP 2012 and desertification: context of reporting

- To assess the effectiveness of the WFD, DG Env wishes backing on:
  - WA elementary information at the "statistical unit", e.g. elementary Ecrins objects (FEC, stretch), that provide background information vs. the "water bodies" (WB)
  - Provide the statistical basis for enhanced indicators (e.g., what is a resource?)
  - Accounts compiled at the sub-basin / monthly level to provide substrate to the analysis of desertification



## Outcomes of the process with DG Env

• WA production contract awarded (to be notified) (Preparatory Action – Development of Prevention Activities to halt desertification in Europe – Service Contract to contribute to the building of water and ecosystem accounts at EU level)

- Ecrins as reference to be populated jointly with the assimilation of WB;
- EEA to lead the production and providing data;
- EEA developing specific data collection, leading to request support to DG Env.
- Prepare, from the outcomes, enhanced data collection for revision of Priority Data Flows to allow regular production of WA and derived indicators



#### Data collection and Ecrins complements

- On the water resource side:
  - Rainfall and actual evapot. Computed over the LEAC grid (1 km2), monthly aggregated; (evapot. Computed from daily data and soil capacity /wilting point). (new)
  - River run-off under completion; poses problems of poor Eionet response for the additional data (beyond SoE water quantity)
  - New dams in relation with new lakes reported as WB missing in the reporting scheme; lakes hydrography missing as well. Collection underway (almost new)
  - Delineation, integration and computation of groundwater underway (cooperation with BGR) (new)



### Data collection and Ecrins complements

#### • On water use side:

- Administrative layer and census population underway; (new)
- Delineation of large and medium cities underway (new)
- Assigment of water supply to individual large cities AND coupling with UWWTP almost finished; (new)
- E-PRTR data conversion to water volumes underway (consultant) (new)
- Water uses (utilisation) for energy has advanced (plants location: ETC/SIA) and volumes (consultant) (new)
- Agricultural uses
  - Rainfed, from CLC and evapot.
  - Irrigation, from JRC estimates

