



ISPRA



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SEMIDE
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Water quantity in EU: the EU CIS WG on “Water Accounts”

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Pilot Arno Water Accounts

PAWA final workshop - Firenze, 30th March 2015



Why is water quantity a concern in EU?

- Balance between demand and availability has reached a critical level in many areas of Europe (water scarcity)
- More and more areas are affected by weather changes, in particular less rain (droughts)
- Climate change will almost certainly make the situation worse
- More frequent and severe droughts expected across Europe and the neighbouring countries
- Total water abstraction in EU 247 billion m³/year
 - 44% for energy production,
 - 24% for agriculture,
 - 17% for public water supply
 - 15% for industry

Business as usual scenario:
Total abstraction will increase by 16% by 2030



What have we done about it so far?

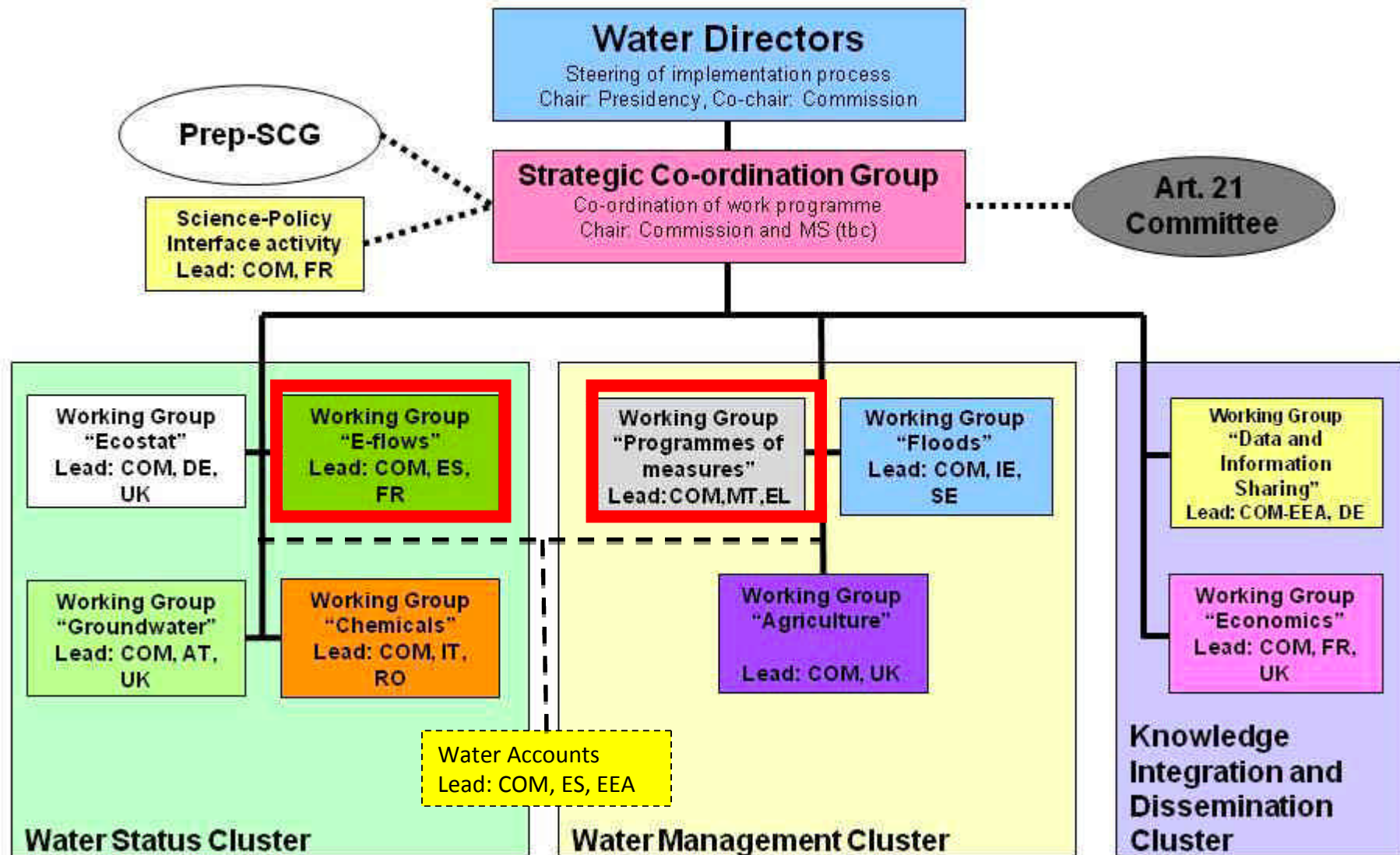
- Water Framework Directive – not so strong on SW quantity
- Commission Communication WS&D 2007 - 7 policy options
 - Putting the right price tag on water
 - Improving drought risk management
 - Fostering water efficient technologies and practices
 - Fostering the emergence of a water-saving culture
 - Allocating water & water-related funding efficiently
 - Considering additional water supply infrastructures
 - Improve knowledge and data collection
- Annual implementation reports
- Launch of Policy Review in 2010
- Blueprint in 2012
- CIS mandate



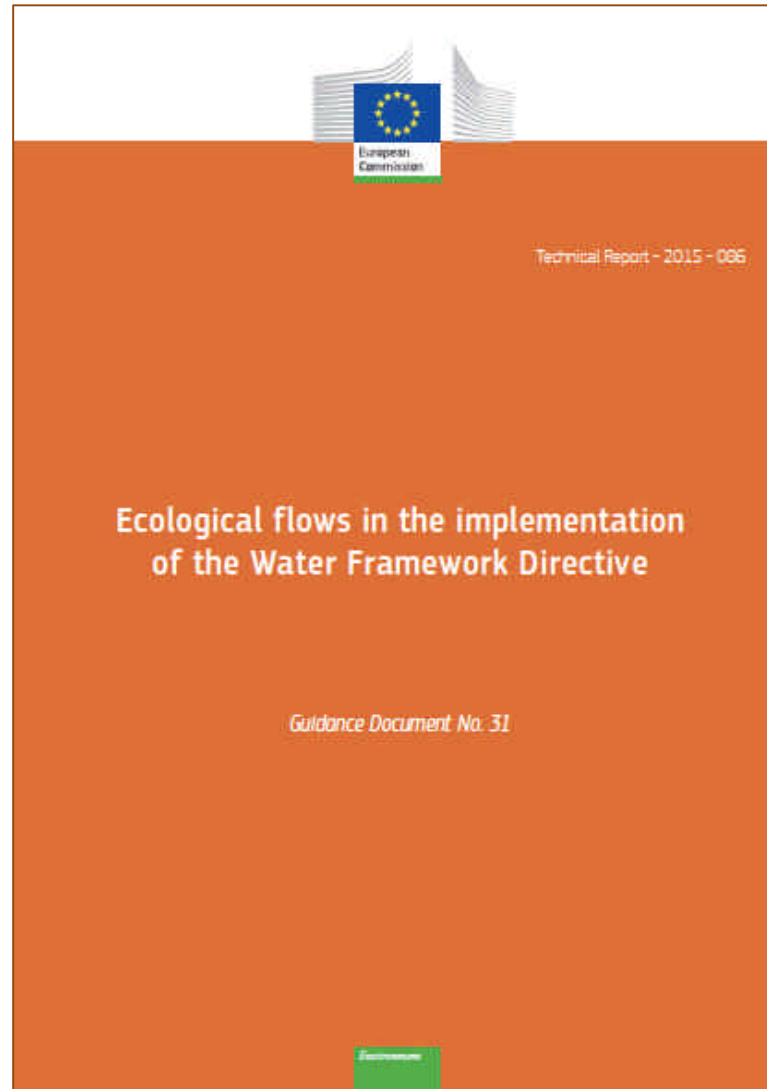
Water Quantity in WFD implementation

- Previous CIS phase – water scarcity & droughts EG:
- Agreeing definitions of WS & D + Starting up work on e-flows
- Development of WS & D indicators
 - SPI,
 - fAPAR,
 - Soil Moisture,
 - SRI,
 - Snowpack,
 - WEI+
- This CIS phase: activities related to quantity in several groups
 - e-flows
 - PoM: Leakage reduction, Water re-use
 - Water accounts

CIS Organisation 2013-2015

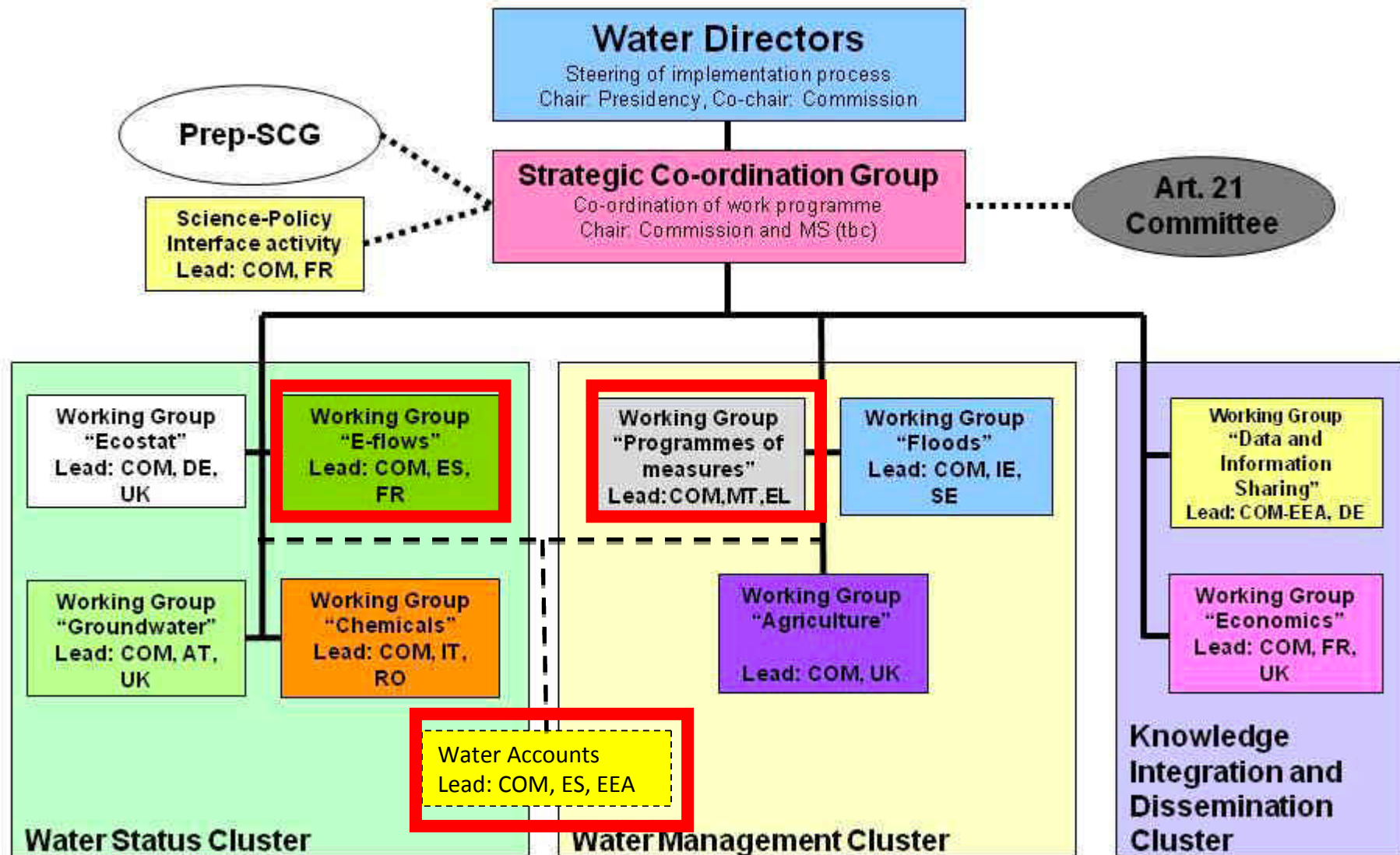


E-flows guidance



<https://circabc.europa.eu>

CIS Organisation 2013-2015

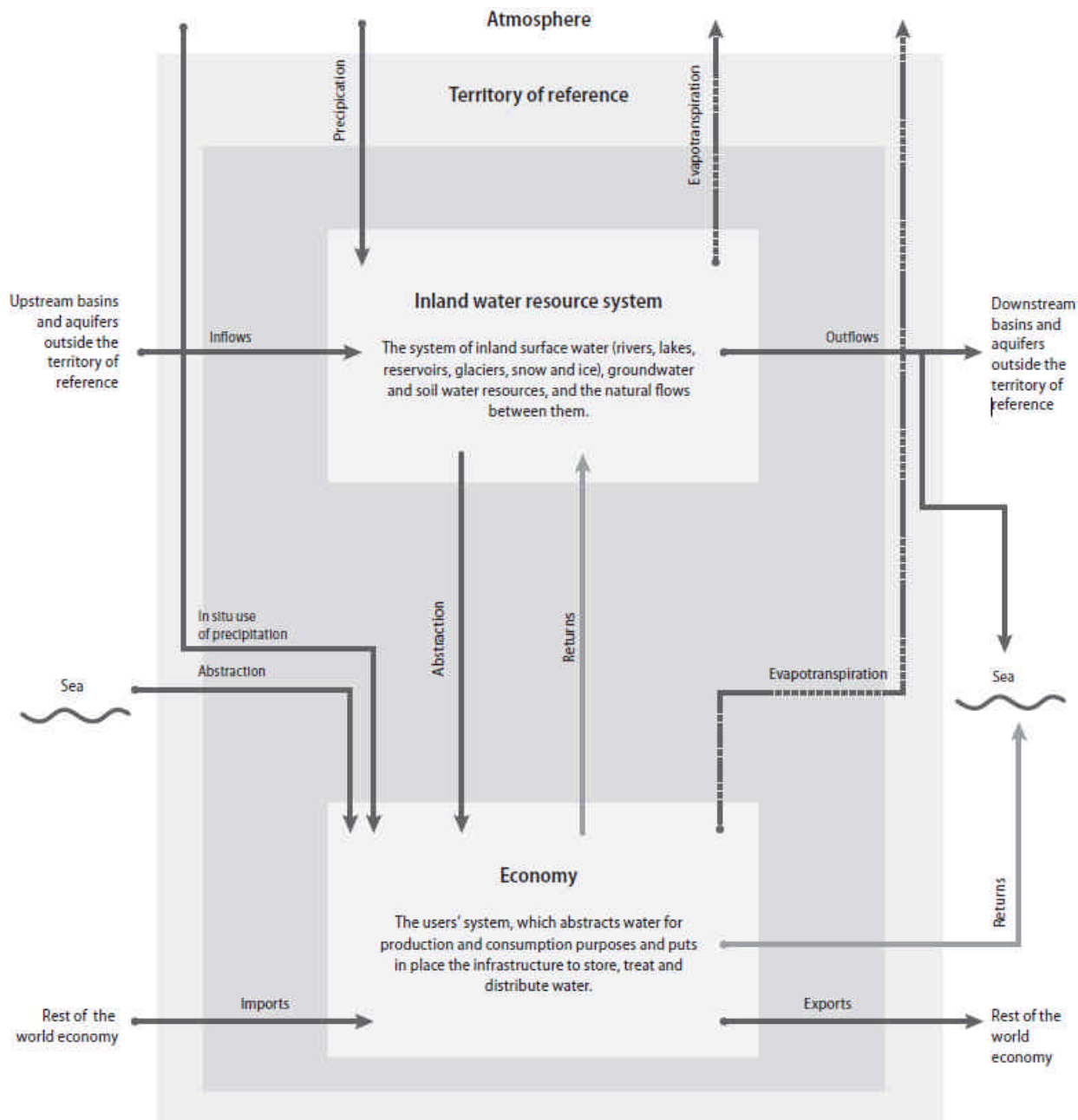


Water Accounts (before)

3 meetings: April + October 2014; March 2015

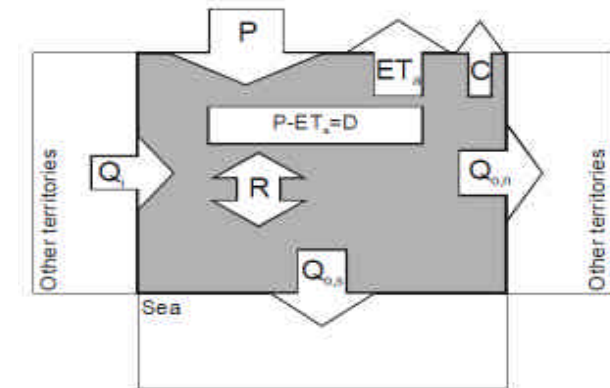
Originary aim:

- Water Accounts to assess efficiency in water use, adopting a common standard (SEEA –Water) of the United Nations



SEEA-Water - System of Environmental-Economic Accounting for Water

Flows between the economy and the environment

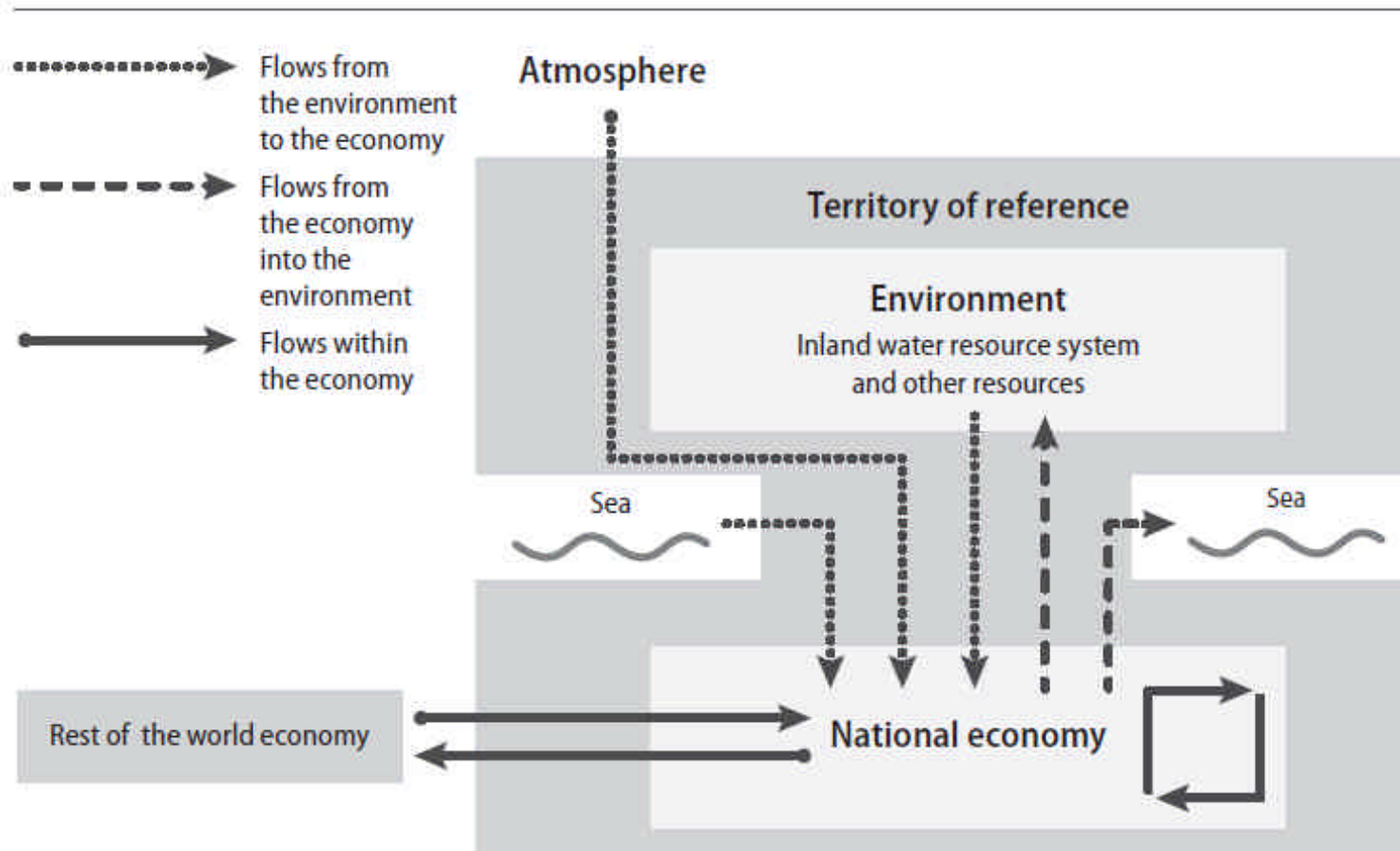


Fonte: **OECD-Eurostat** Joint Questionnaire on Inland Waters

Fonte:
System of Environmental-Economic Accounting for Water
ST/ESA/STAT/SER.F/100
United Nations publication

***SEEA-Water** - System of Environmental-Economic Accounting for Water*

Flows in the physical supply



***SEEA-Water** - System of Environmental-Economic Accounting for Water*

Physical use table (*physical units*)

[illegible]

Water Accounts (before)

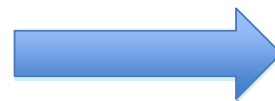
3 meetings: April + October 2014; March 2015

Originary aim:

- Water Accounts to assess efficiency in water use, adopting a common standard (SEEA – Water) of the United Nations

But....

- ✓ need to agree on physical balances
- ✓ Need to assess the applicability of SEEA-Water in different contexts



2 sets of grants

Water Accounts (after)

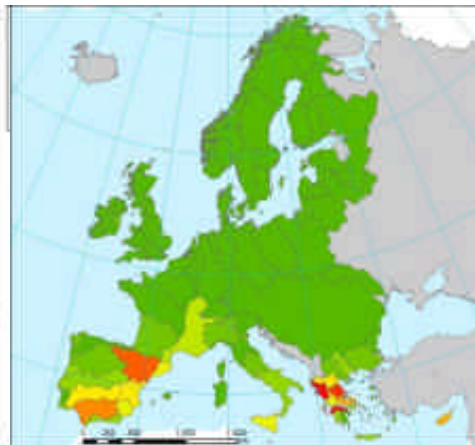
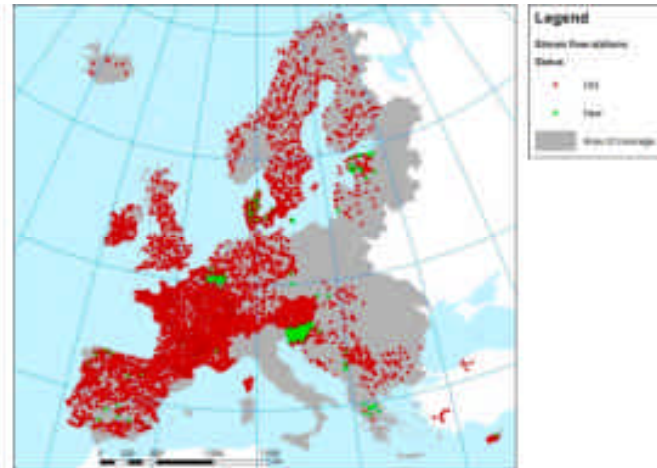
Current Focus & Mandate:


- Physical Water Balance: glossary, scales, goals
 - ✓ to support development and use of WB in MS at the RB scale for WRs management + achievement of WFD obs
 - ✓ to ensure consistency among different reporting requirements on water quantity: WFD, EEA, Eurostat....

Obblighi informativi EU (..e IT?)

- WFD Reporting: Volumi annui per uso
Dati di bilancio mensile a partire dal WEI+
per il mese di > stress
- EEA: dati di bilancio mensili; dati idrologici
giornalieri
- EUROSTAT: dati bilancio idrico annuo
- D.M. 2004 su bilancio idrico;
- D. Lgs. 112/98: **bilancio nazionale**

EEA assessment on WA



European Environment Agency 

European Water Assets Accounts and updating the use of freshwater resources indicator (CSI 018)
– Draft for consultation of data sources and technical application of the WEI+ formulas




Photo: © Peter Kalmayev

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...results to be checked by MS!!!!



EUROPEAN COMMISSION
DIRECTORATE-GENERAL
ENVIRONMENT
Directorate C - Quality of Life, Water & Air
ENV.C.1 - Water

Brussels, ~~January~~ March 11th, 2015
ENV/CIS/WD-WA

Deliverable: WB guidance (draft) inclusive of pilot projects results!

Guidance document on the application of water balances for supporting water management and the implementation of the WFD

Draft – Version 4.0 – 11/03/2015¹

¹ This draft version of the guidance document has been developed by Pierre ~~Stouvenou~~ (ACLOPP), Alexandra Rossi (ACLOPP) and Maggie ~~Suende~~ (SEVEN). It builds on input from different Member States (MS) and on results from pilot projects funded under the EC Water balances grants.

Key issue	Expected input
Name of the Pilot project	PAWA
Spatial scales <ul style="list-style-type: none"> Territory (catchment, other) covered by the pilot project Basic unit at which the water balance has been set (water body, catchment, other) 	<p>The analysis was focused on three specific sub-basins within the larger Arno watershed (8228 sq km), so that the System of Environmental-Economic Accounting for Water (SEEA-Water) could be thoroughly investigated by testing its application on areas characterized by different water exploitation issues:</p> <ul style="list-style-type: none"> Chiana valley (1777 sq km) Bisento valley and Prato plain (Hydr. Basin of 320 sq km + Groundwater 90 sq km) Pisa area (407 sq km) <p>These sub-basins have been identified using the following criteria: vulnerability to drought and water scarcity; data availability and water governance structure. Nonetheless, data collection and modelling tools took the whole Arno river basin as reference area.</p>
Temporal scales <ul style="list-style-type: none"> Time unit at which the water balance is developed Smallest time unit considered 	<p>1991-2013 at monthly scale when possible. It was decided to cover a 20 years period, because some data were available for that period and in order to compute long term average for some of the parameters</p>
Accounting for the environmental demand	<p>The Environmental demand is not taken into account in the SEEA-W and not introduced in the WA tables prepared during the project. In order to capture the Environmental demand, the WEF² was used with a specific (higher) threshold to take it into account when selecting measures</p>
Information mobilised	<p>Main sources of information/data for the key parameters/components of the water balance – See tables prepared for D2.2 “assessment of data availability”</p>
Main sources of uncertainty	<p>Water abstraction for agricultural uses based only on permits (annual values) does not catch real abstraction and variation in time</p> <p>Evapotranspiration – estimated from the hydrological model (calculation at daily scale then aggregated on a monthly scale)</p> <p>A number of data were estimated with stakeholders/experts: leakages, urban wastewater treatment, returns to environment outside WWTP</p> <p>A hydrological model was used in order to obtain physical water resources (WATER RESOURCES MANAGEMENT (WRM) (Water Resources Management) model) and the estimation of the elements of the water balance (vegetation system) was used in order to estimate the physical water resources</p>
Socio-economic issues	<p>Water balance is based on actual water use, not on potential water use, based on actual water use</p>
Main management scenarios investigated	<p>Different hypotheses were tested in order to achieve the goal of improving the flow regime: water abstraction was tested by comparing a list of indicators derived from the WFD (before/after). The choice of the selected measures in the different test scenarios depended on the needs highlighted as regards to the environmental status of the main waterbodies, as reported in the River Basin Management Plans.</p>
Other specific challenges met when developing the water balance	<p>The main challenges faced by the project are:</p> <ul style="list-style-type: none"> Defining a standard/common way to take into account in the WA No of existing tools to manage the SEEA-W tables, resulted in a lot of efforts dedicated to the development of prototype MS-Excel + VBA tool to compute the WA, some indicators and assess the impact of measures Definition of a realistic catalogue of measures Lack of monitoring data on water abstraction and use from local territories, especially for agricultural uses Water quality not taken directly into account Lack of time to investigate and collect socio-economic data linked to the territories studied Better accuracy on water use (abstraction and consumption) could have been reached if more resources would have been available to

Water Accounts future steps?

Next Mandate? No

The group will finish after WB guidance endorsement

- The themes likely to be dealt with in:
- a *transversal* hymo group coping with water quantity and dynamics – hopefully, eventually!
- In the PoM group
- In the WG Economics

Grazie

