



A Challenge for the Global and European Water Policies: The Harmonization of Terms, Definitions and Concepts

European conference of the
Czech Presidency of the
Council of the EU

TOWARDS eENVIRONMENT



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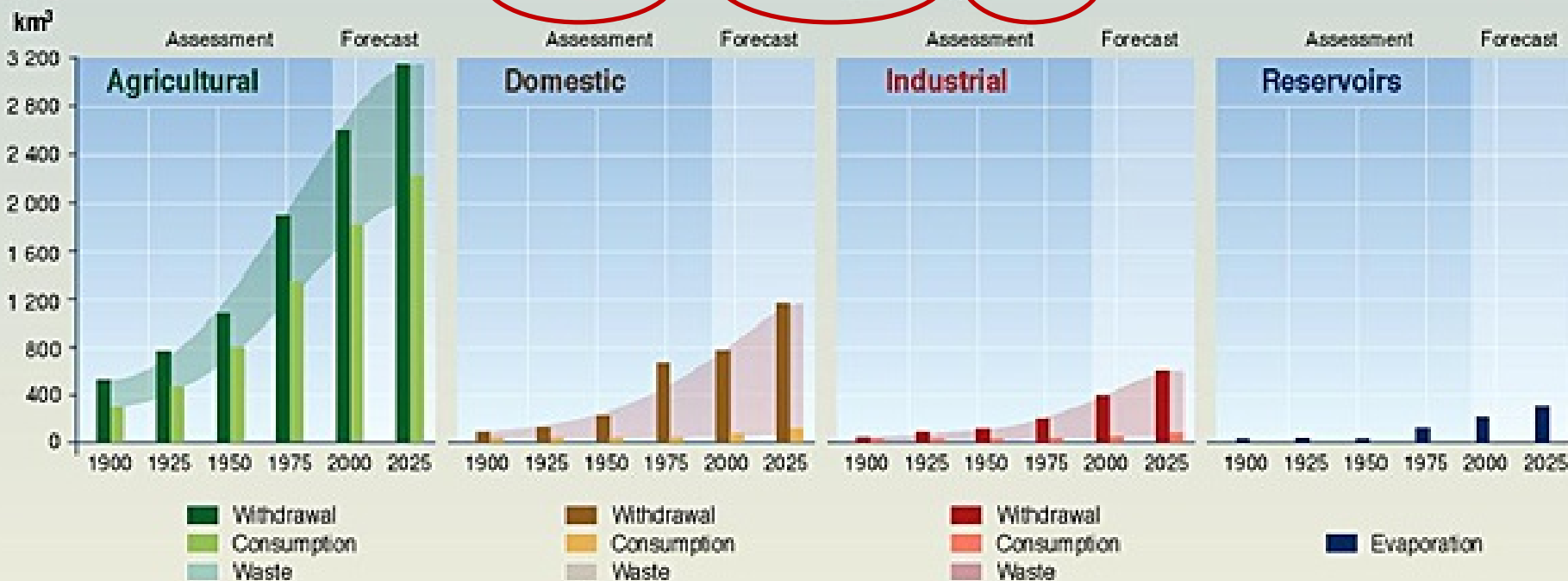
Simple question: What is a „water use“ (in terms of m³/year)?

- Water abstracted for irrigation purposes?
- Water taken from the tap?
- Water flowing in irrigation canals?
- Water driving turbines in hydropower plants?
- Water evapo-transpired by agricultural crops?
- Water incorporated in products?
- Drinking of water from bottles?
- Freshwater used for cooling purposes?
- Seawater used for cooling purposes?
- Water needed for navigation?
-



Example for use of water data for global water policies

Evolution of Global Water Use Withdrawal and Consumption by Sector



Note: Domestic water consumption in developed countries (500-800 litres per person per day) is about six times greater than in developing countries (60-150 litres per person per day).

PHILIPPE REINACTEWCZ
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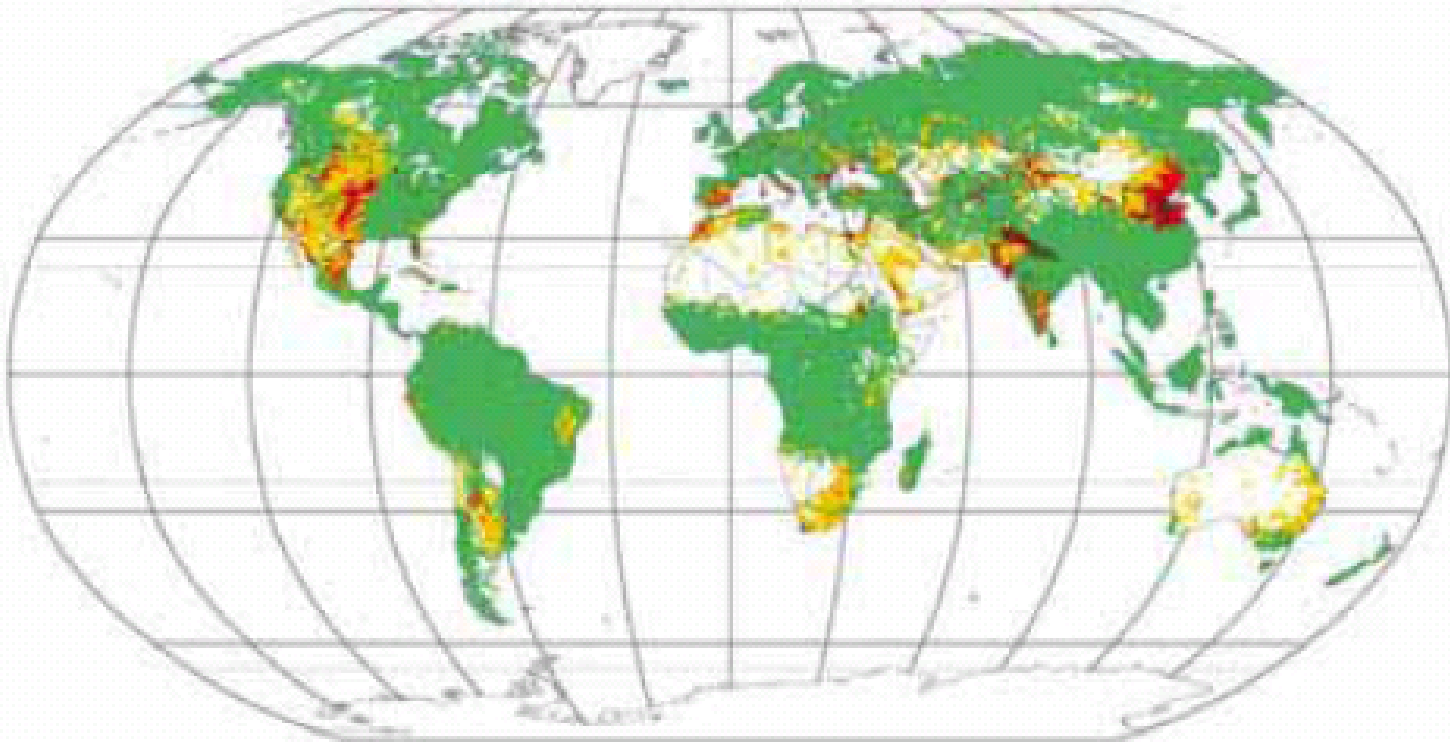


Source: Igor A. Shiklomanov, State Hydrological Institute (SHI, St. Petersburg) and United Nations Educational Scientific and Cultural Organisation (UNESCO, Paris), 1999.



Example for use of water data for global water policies

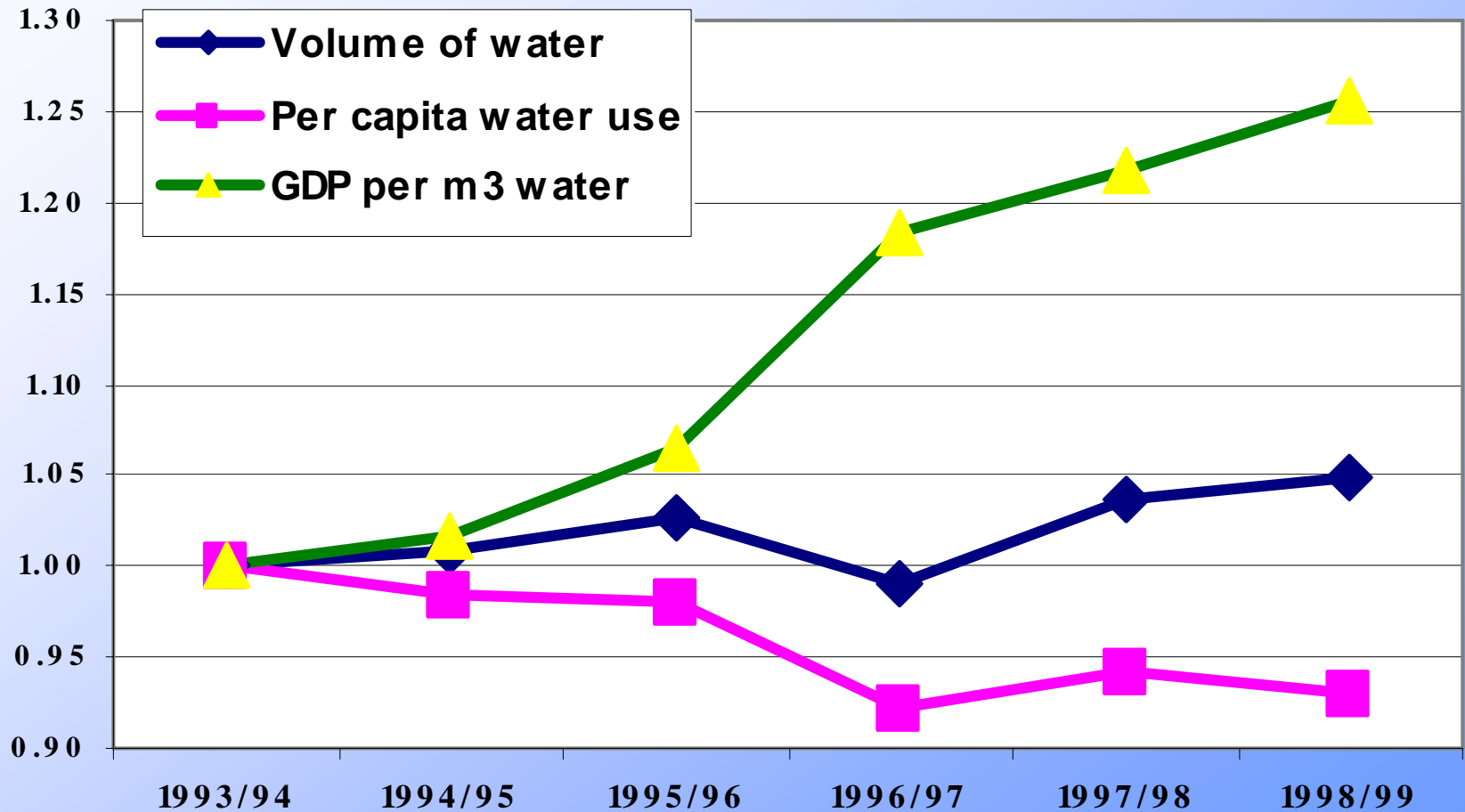
Water use in excess of natural supply (average annual)



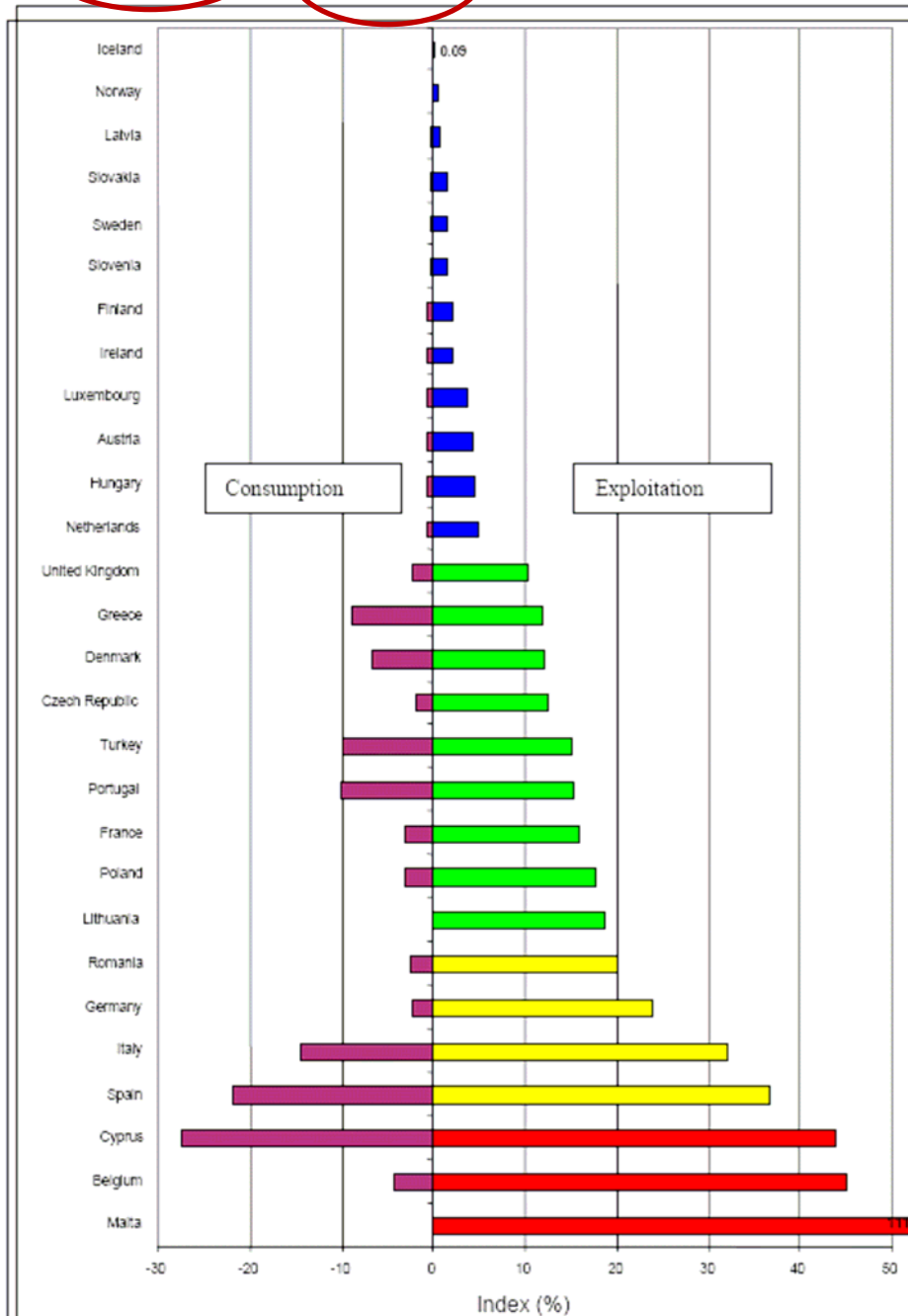


Indicators: economic growth and water use

Botswana **water use** and economic
Growth, 1993-1998



Consumption and exploitation indexes in European countries



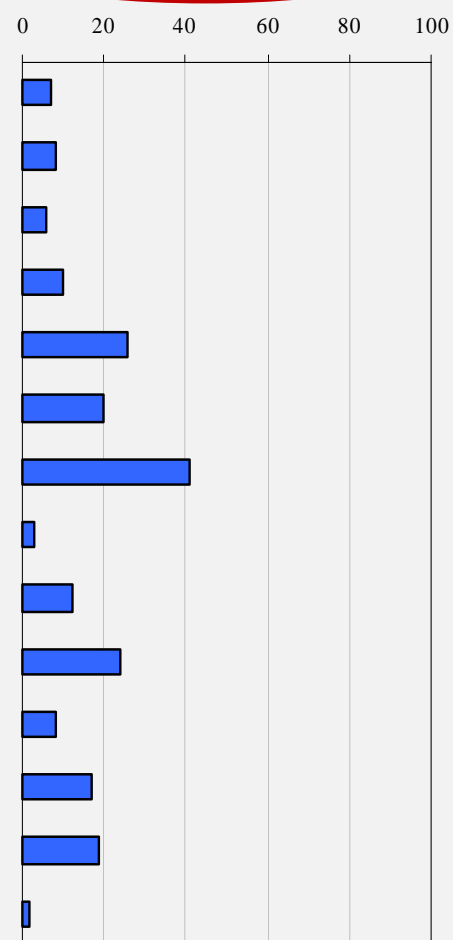
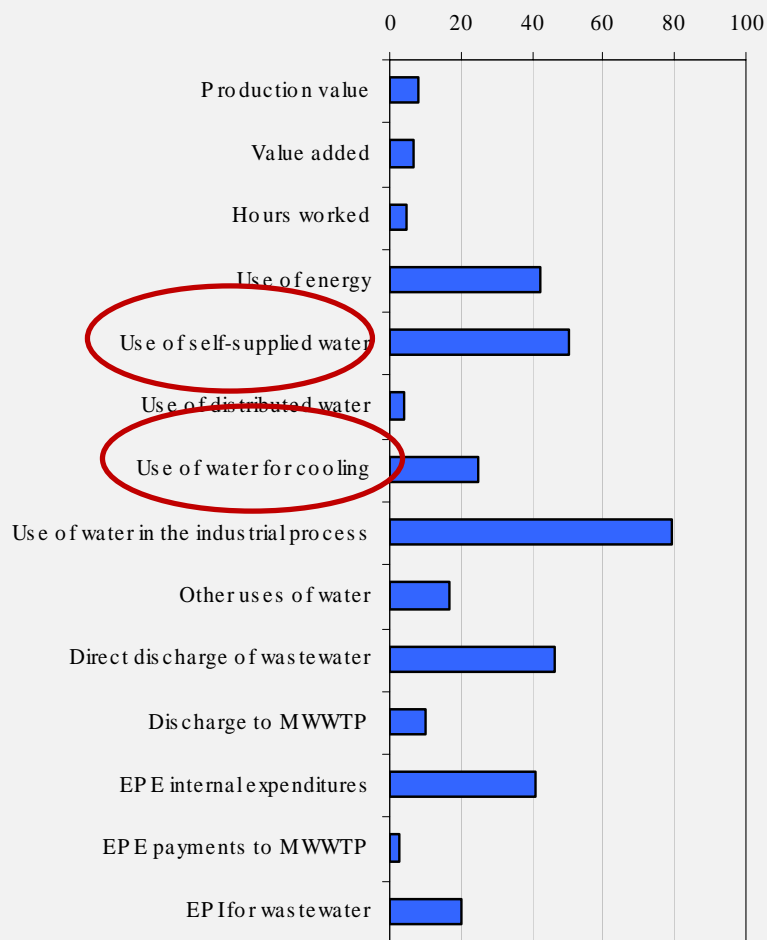


Environmental Economic Profiles Sweden 1995

umweltbundesamt

Pulp, paper and paper products

Chemicals and chemical products



International Water Association (IWA) Leaflet

SPECIFIC WATER CONSUMPTION IN LITRES / CAPITA / DAY

| COUNTRY | CITY | HOUSEHOLD AND SMALL BUSINESS | INDUSTRY AND OTHERS | TOTAL |
|-------------------|--------------|------------------------------|---------------------|-------|
| ARGENTINA | Buenos Aires | 383 | n/a | 383 |
| | Comientes | 157 | n/a | 157 |
| | Mendoza | 477 | n/a | 477 |
| | Salta | 323 | n/a | 323 |
| AUSTRALIA | Brisbane | 286 | 431 | 717 |
| | Adelaide | 273 | 143 | 416 |
| | Melbourne | | | 428 |
| | Perth | 294 | 128 | 422 |
| | Sydney | 214 | 127 | 341 |
| AUSTRIA | Graz | n/a | | 193 |
| | Innsbruck | 144 | 71 | 215 |
| | Linz | n/a | | 207 |
| | Salzburg | n/a | | 202 |
| | Vienna | 147 | 42 | 189 |
| BELGIUM | Louvain | 92 | 35 | 126 |
| | Antwerp | 166 | 472 | 638 |
| | Brussels | 112 | 167 | 279 |
| | Liege | 103 | 82 | 185 |
| | Ghent | 82 | 108 | 190 |
| | Charleroi | 78 | 112 | 190 |
| CHINESE HONG KONG | | 127 | 89 | 216 |
| CYPRUS | Larnaca | 121 | 28 | 149 |

| COUNTRY | CITY | HOUSEHOLD AND SMALL BUSINESS | INDUSTRY AND OTHERS | TOTAL |
|-------------|-----------|------------------------------|---------------------|-------|
| JAPAN | Nagoya | 283 | 47 | 330 |
| | Osaka | 252 | 252 | 504 |
| | Hiroshima | 229 | 89 | 318 |
| | Fukuoka | 204 | 76 | 280 |
| | Sapporo | 204 | 64 | 268 |
| | Sendai | 225 | 80 | 305 |
| | Tokyo | n/a | n/a | 345 |
| | Yokohama | 239 | 73 | 312 |
| LITHUANIA | Kaunas | 71 | 45 | 115 |
| | Klaipeda | 76 | 53 | 129 |
| | Panevezys | 68 | 57 | 125 |
| | Siauliai | 59 | 25 | 84 |
| | Vilnius | 89 | 38 | 128 |
| MAURITIUS | Mauritius | 165 | 55 | 220 |
| NETHERLANDS | Amsterdam | 149 | 58 | 207 |
| | Rotterdam | 146 | 89 | 235 |
| | Den Haag | 110 | 54 | 164 |
| | Utrecht | 103 | 69 | 172 |
| | Eindhoven | 119 | 72 | 191 |
| NORWAY | Bergen | 200 | 295 | 495 |
| | Oslo | 200 | 282 | 482 |
| | Trondheim | 164 | 201 | 365 |

Selected definitions for WATER USE

- System of Environmental-Economic Accounting for Water (SEEA-W): *Water intake of economic unit. Water use is the sum of water use within the economy and water use from the environment.*
- OECD/Eurostat/UNSD/UNEP: *Refers to water that is actually used by end users for a specific purpose within a territory, such as for domestic use, irrigation or industrial processing. Excludes returned water.*
- Water Footprint: *Water use is measured in terms of water volumes consumed (evaporated) and/or polluted per unit of time.*

Selected definitions for WATER CONSUMPTION

- OECD/Eurostat/UNEP/UNSD: *Water abstracted which is no longer available for use because it has evaporated, transpired, been incorporated into products and crops, consumed by man or livestock, ejected directly to the sea, or otherwise removed from freshwater resources.*
- International Water Association (IWA): *Consumption is understood to be the amounts of water delivered to the final customer.*

Selected definitions for WASTEWATER

- OECD/Eurostat: *Water which is of no further immediate value to the purpose for which it was used or in the pursuit of which it was produced because of its quality, quantity or time of occurrence. However, waste water from one user can be a potential supply to a user elsewhere. Cooling water is not considered to be waste water for purposes of this questionnaire.*
- UNSD/UNEP: *Water which is of no further value to the purpose for which it was used because of its quality, quantity or time of occurrence. However, wastewater from one user can be a potential supply to a user elsewhere. Cooling water is included.*
- SEEAW: *Water which is of no further immediate value to the purpose for which it was used or in the pursuit of which it was produced because of its quality, quantity or time of occurrence. However, waste water from one user can be a potential supply to a user elsewhere. It includes discharges of cooling water.*

Other challenges

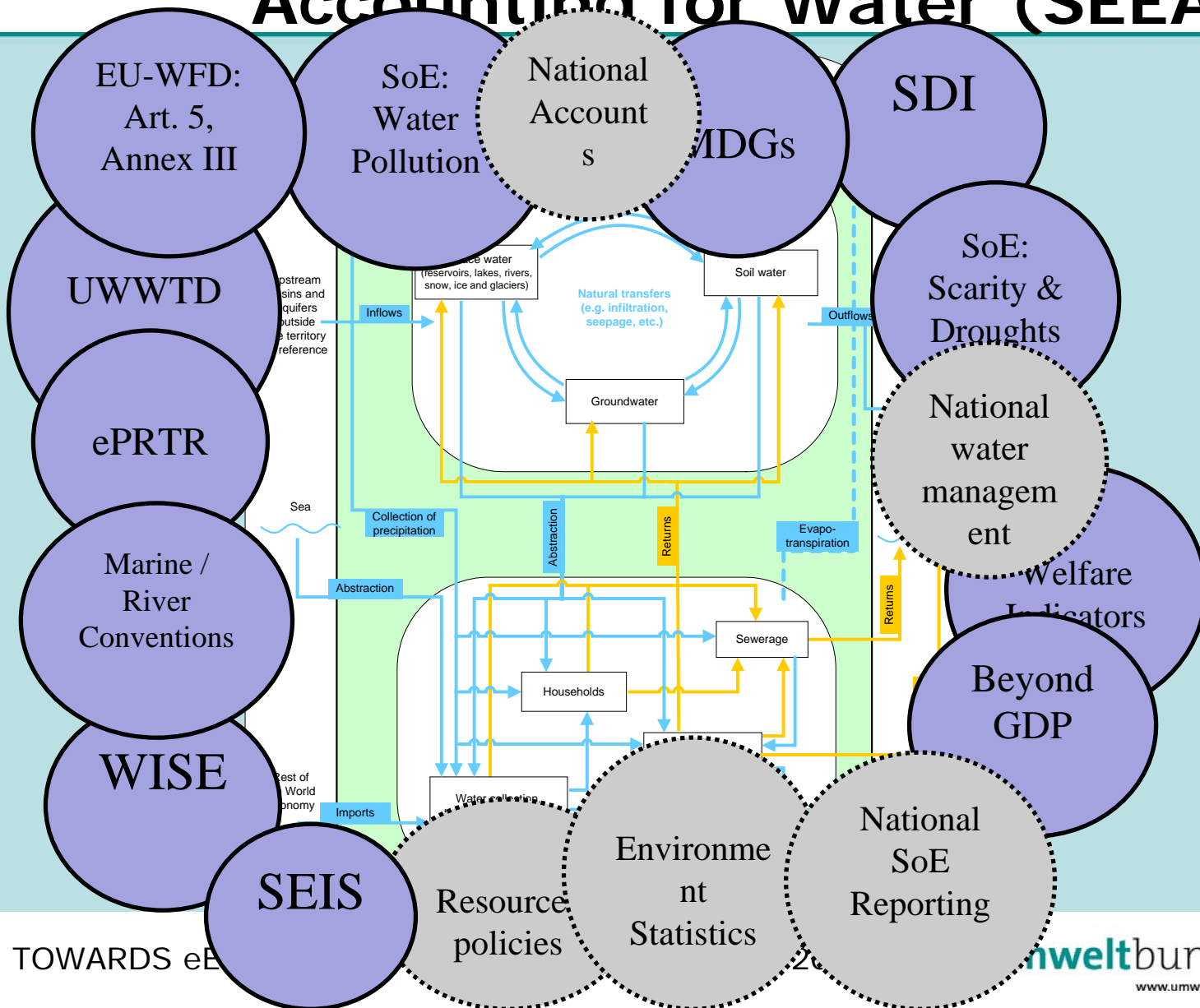
- Agreed water flow diagrams by different communities:
 - Statisticians
 - Water managers
 - Scientists
 - Economists
 - ...
- Combination of physical data with economic data
- Agreed standard classifications and reporting units
- Spatial and temporal resolution of data:
 - River Basin Level
 - Seasonal variations

Possible ways forward

- IWG-ENV water statistics (UNSD, UN-ECE, UNEP, OECD and Eurostat): Harmonization of definitions and concepts
- UNSD, Eurostat, EEA, DG ENV:
 - Environmental-Economic Accounting high on the agenda. This includes water accounts
 - Contribution to International Recommendations for Water Statistics
- 5th World Water Forum: SEEAW could provide the way forward
- SEIS / WISE:
 - Which policy questions do we want to address?
 - Where are the links to existing concepts in place (ePRTR, UWWTD, WFD, SoE, Eurostat/OECD-Joint Questionnaire,...)
 - Who are the users of the data?
 - Consistent concept, classifications and vocabulary needed
 - Strong cooperation within Go4 needed



System of Environmental Economic Accounting for Water (SEEAW)



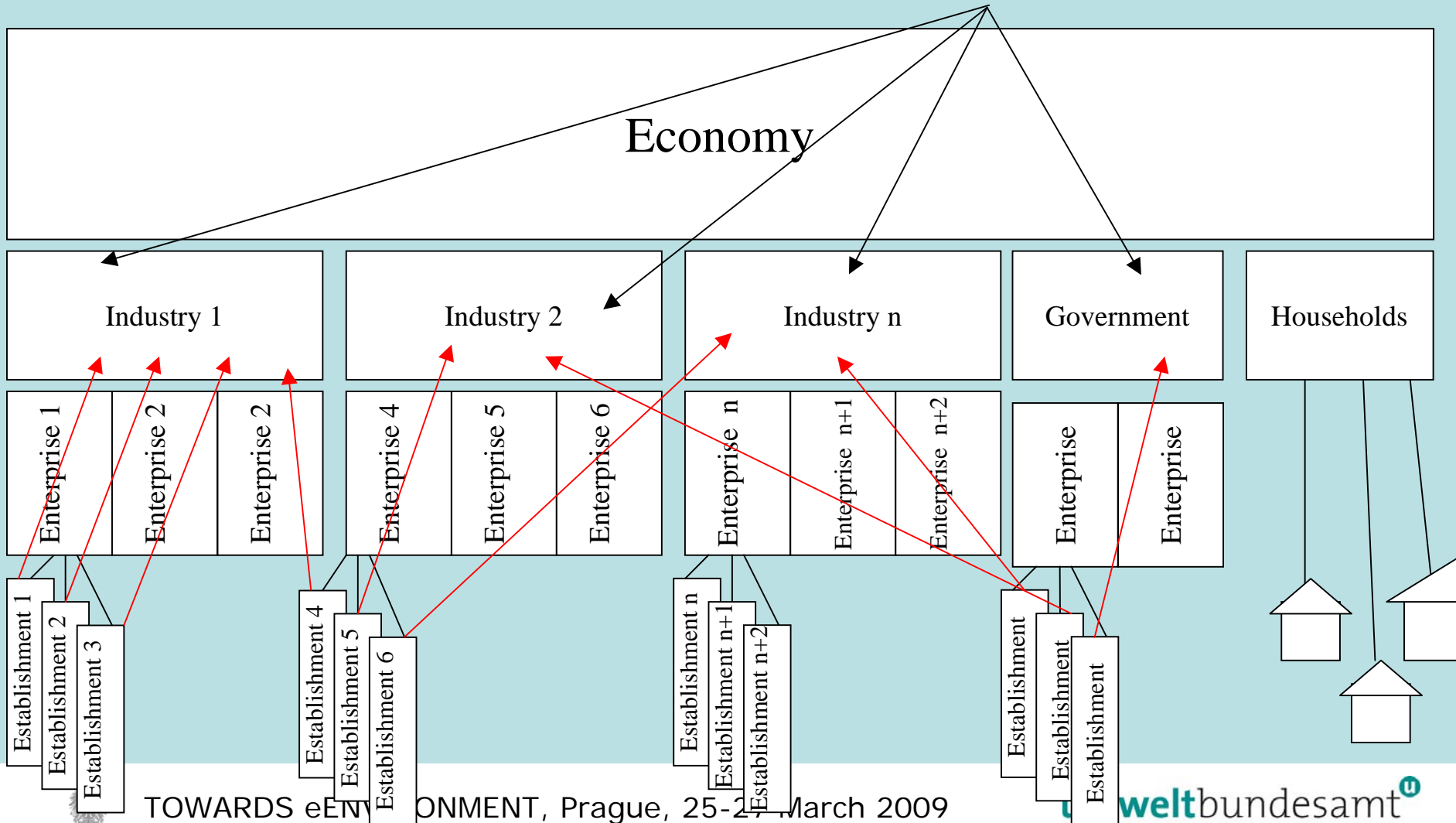
International Recommendations for Water Statistics (IRWS)

- UNSD with experts from FAO, UNEP, Eurostat, EEA and country experts from various regions of the world
- Chapter 3: Statistical Units and Classifications used in Water Statistics
- Chapter 4: Data items
- Will be official document of the United Nations and set comprehensive standards for water terminology

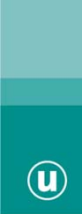
- Water Resources:
 - Surface water (EA 131)
 - Artificial reservoirs (EA 1311)
 - Lakes (EA 1312)
 - Rivers (EA 1313)
 - Snow, ice and glaciers (EA 1314)
 - Groundwater (EA 132)
 - Soil water (EA 133)

IRWS: Statistical Units

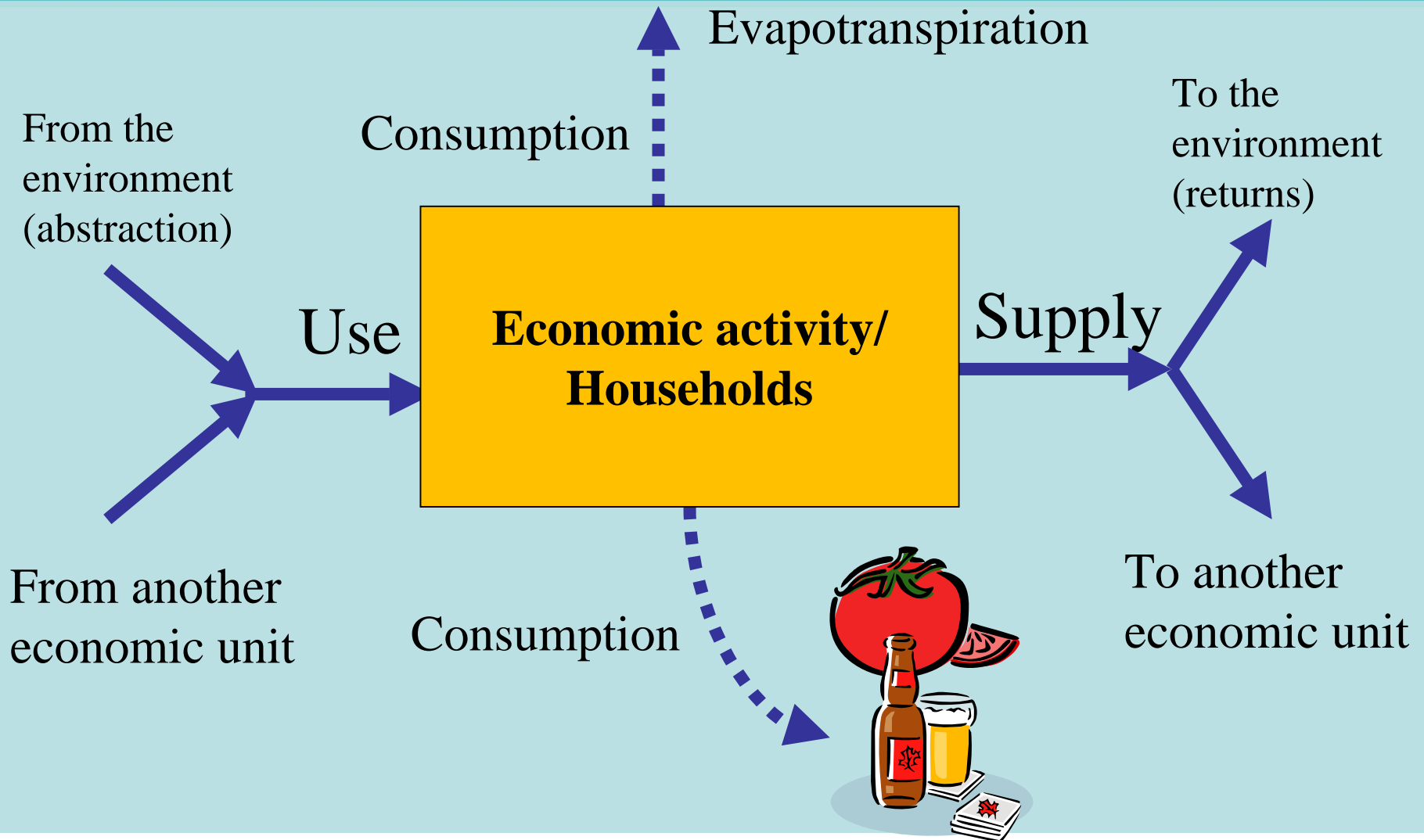
International Standard Industrial Classification



- E. Abstraction of water
 - E.1. From inland water resources
 - E.1.1. From surface water
 - E.1.1.1. From artificial reservoirs
 - E.1.1.2. From lakes
 - E.1.1.3. From rivers
 - E.1.1.4. From snow, ice and glaciers
 - E.1.2. From groundwater
 - E.1.2.1. Renewable groundwater
 - E.1.2.2. Non-renewable groundwater
 - E.1.3. From soil water
 - E.2. Abstraction from other sources
 - E.2.1. Collection of precipitation
 - E.2.2. From the sea



IRWS: Flow Diagrams



- International agencies and expert groups have their own languages
- The global and European picture on water is the result of data gathered in different contexts:
 - water management (including EU-Directives)
 - statistics
 - meteorology
 - national accounts
 - research
- Global and European activities need to link concepts, terms and definitions
- Policy relevant questions require the combination of physical data with economic data

Conclusions II

- SEEAW is an UN standard that could also be discussed in the context with SEIS/WISE as a possible central concept to link the different water related activities:
 - Water Framework Directive (e.g. Economic Analysis)
 - Urban Wastewater Treatment Directive
 - e-PRTR
 - Scarcity and Droughts
 - Water Statistics of Eurostat
 - SoE-Reporting
 - Environmental-Economic Accounting
- Close cooperation within Go4 is needed in order to develop a single European position which can be brought into the global discussion process (UN agencies)
- Agreed vocabulary and conversion rules needed





Thanks for listening!

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