



Session 2.3

Deriving indicators from physical water accounts tables

RW-2-REG

October 19th ,2020, Online

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Indicators



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- Indicators are simple **measures** that tell us **what is happening in the environment we live**
- **Since the environment is very complex** indicators provide a more practical and economical way **to track the state of the environment** than if we attempted to record every possible aspect individually

Types of indicators

- **Environmental**
 - Water
 - Land
 - Climate
- **Economic**
- **Health**
- **Socioeconomic**
- ...

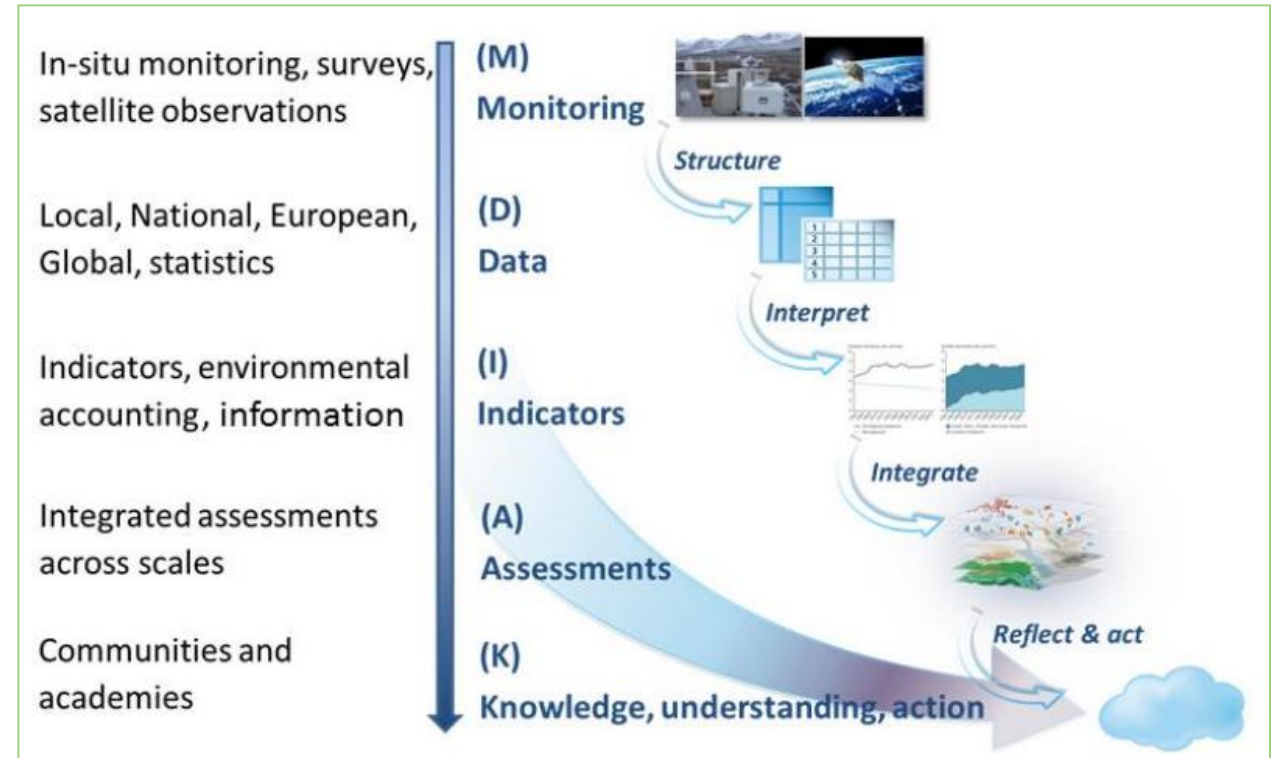


Indicator as part of an overall strategy



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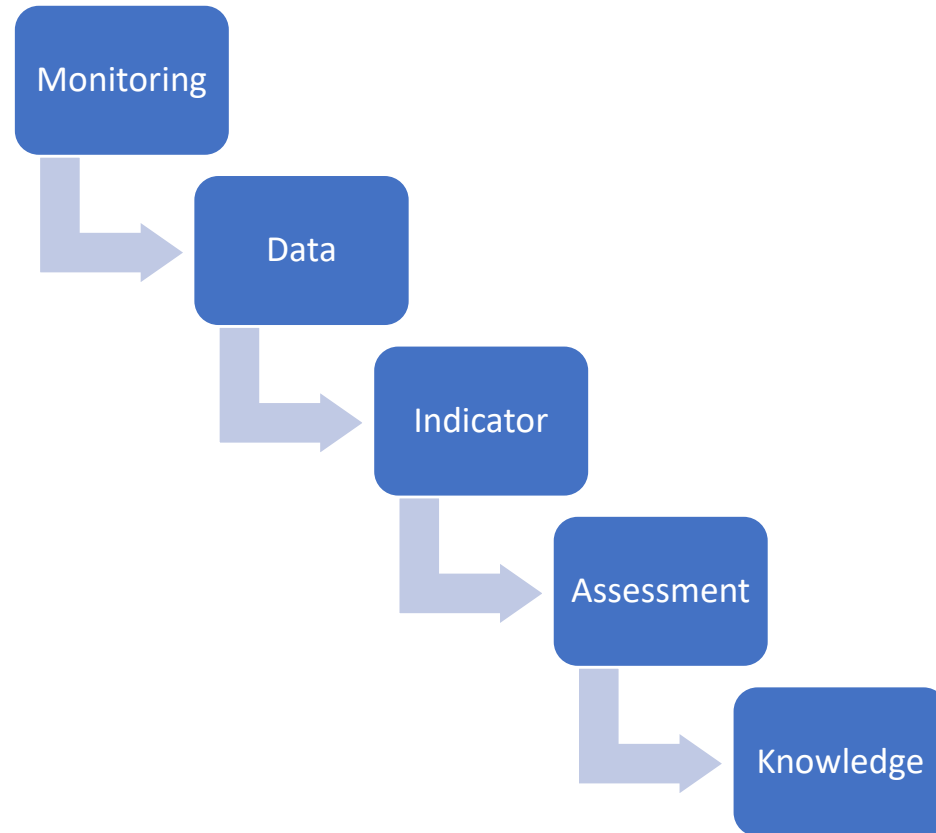
- Indicators as policy assessment tools
 - National
 - Regional (e.g. EU-WFD)
 - International SDG



Indicator as part of an overall strategy

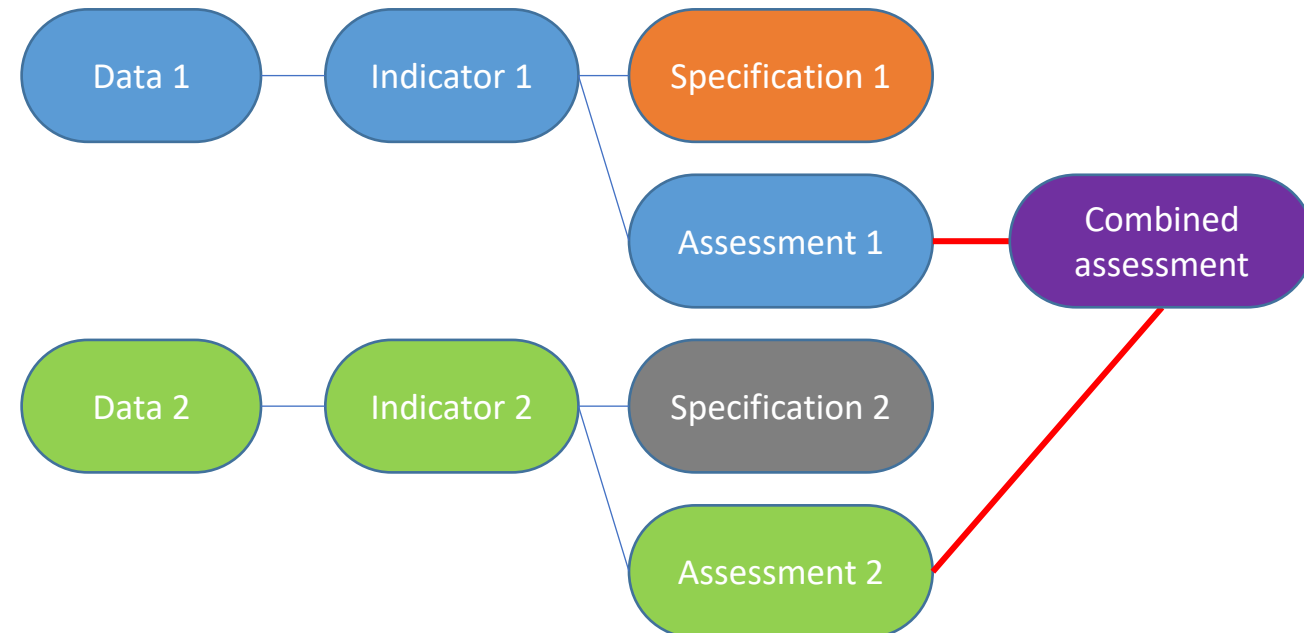


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Indicators require to get a set of harmonized and integrated data

predefined methodological specifications

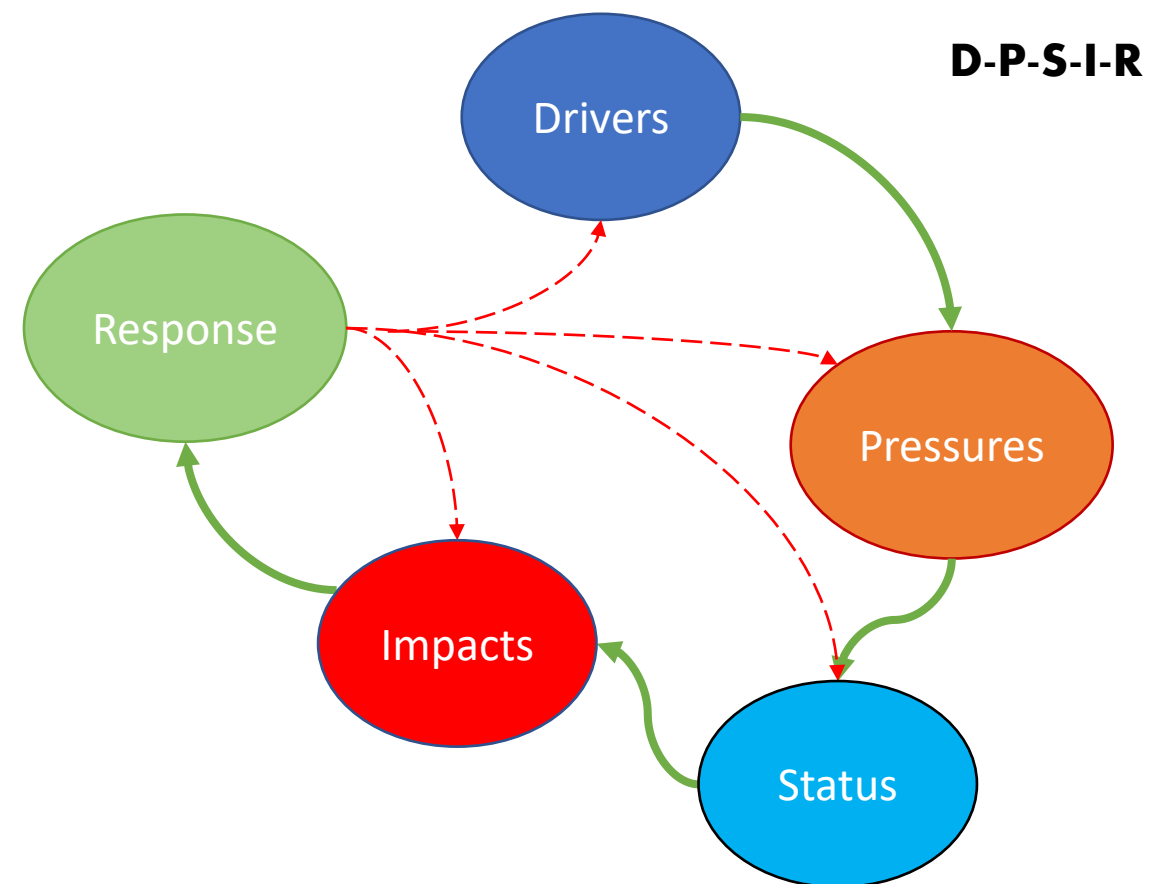




Challenge areas

- Global – climate change
- Resources allocation (minerals)
- Agriculture – food security
- Industry – circularity
- Sustainable Energy

...More on Day 5...

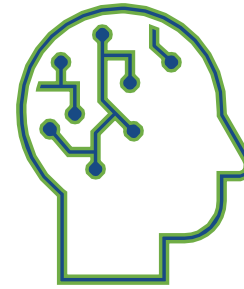


Water accounts and indicators



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- Water accounts constitute a very powerful tool for improving water management as they provide basic information for the derivation of many water-related indicators
- Water accounts is a **structured database** for economic and hydrologic information.
 - ensures consistency of the indicators
 - study further the interlinkages and causes of changes
 - modelling scenarios



Deriving indicators from physical water accounts tables



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- Critical policy questions require the linking of data on water with economic data or outputs (GDP, NVA etc.)
 - The contribution of specific economic activities to the **pressure on water resources** and the options for reducing that pressure
 - The **impacts for water resources** of economic growth
 - The social and economic impacts of water policy instruments, such as regulation, water pricing etc.

		Industries (by ISIC category)						Households	Rest of the world	Total
		1-3	5-33, 41-43	35	36	37	38, 39, 45-99			
		Total								
A. Physical use table (physical units)										
From the environment	1. Total abstraction (= 1.a + 1.b + 1.i + 1.ii)									
	1.a. Abstraction for own use									
	1.b. Abstraction for distribution									
	1.i. From inland water resources:									
	1.i.1. Surface water									
	1.i.2. Groundwater									
	1.i.3. Soil water									
	1.ii. Collection of precipitation									
Within the economy	1.iii. Abstraction from the sea									
	2. Use of water received from other economic units of which:									
	2.a. Reused water									
	2.b. Wastewater to sewerage									
3. Total use of water (= 1 + 2)										

		Industries (by ISIC category)							Households	Rest of the world	Total
		1-3	5-33, 41-43	35	36	37	38, 39, 45-99	Total			
B. Physical supply table (physical units)											
Within the economy	4. Supply of water to other economic units of which:										
	4.a. Reused water										
	4.b. Wastewater to sewerage										
Into the environment	5. Total returns (= 5.a + 5.b)										
	5.a. To inland water resources										
	5.a.1. Surface water										
	5.a.2. Groundwater										
	5.a.3. Soil water										
	5.b. To other sources (e.g., sea water)										
6. Total supply of water (= 4 + 5)											
7. Consumption (= 3 - 6)											



Remarks - 1

- Most of the indicators can be compiled also at the regional level, such as river basin
- The indicators can also be disaggregated by type of resource (e.g. surface water and groundwater)
- While a national overview is important, the indicators would be more useful for **IWRM** if they were compiled at the level at which IWRM is likely to be implemented
- Definition of threshold values (TV)



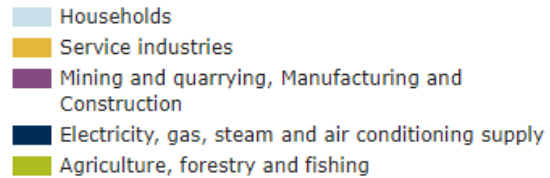
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Proposed list of indicators

- Precipitation / evapotranspiration anomalies
- Sustainable water use (certain % level of water use)
- Population (urban/rural)
- Relative water stress index (when compared with renewable water resources)
- Total actual renewable water resources (TARWR)
- Annual/seasonal/monthly precipitation (droughts)
- TARWR per capita
- SW and GW share as of TARWR
 - Inflow
 - Outflow
 - Total use

More Info on SEEA-Water Annex III

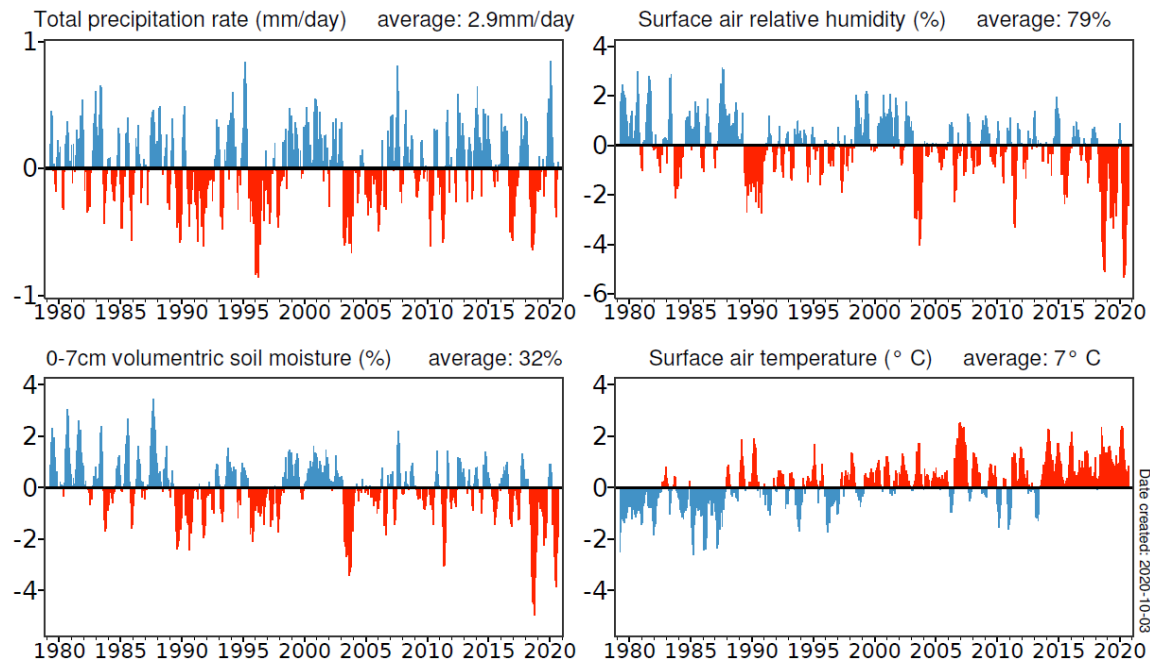


Precipitation monitoring



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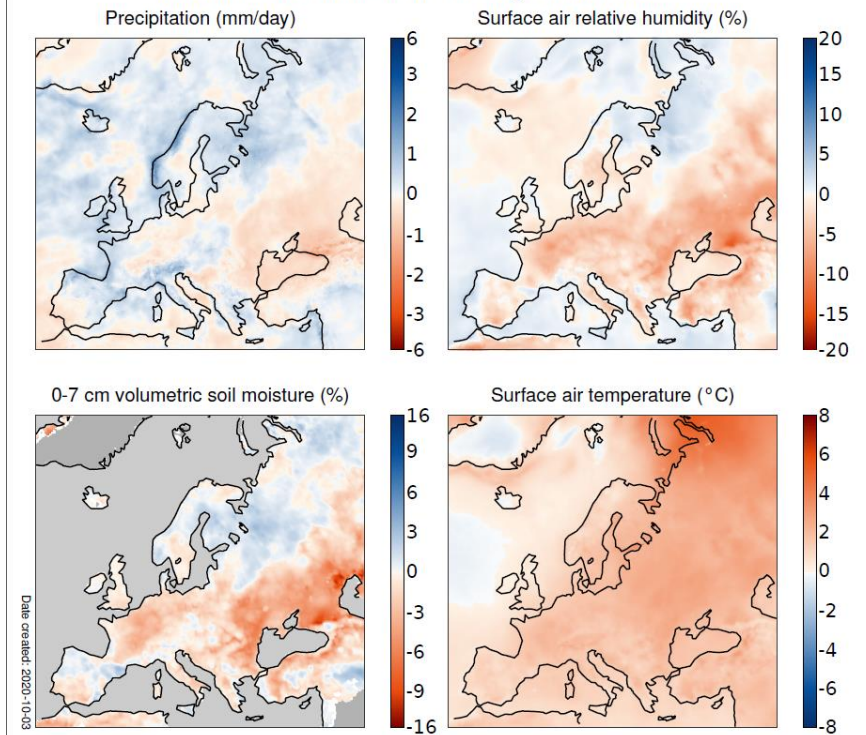
Four-months mean anomalies over North-West Europe



(Data: ERA5. Reference period: 1981-2010. Credit: C3S/ECMWF)



Anomalies for October 2019 to September 2020



(Data: ERA5. Reference period: 1981-2010. Credit: C3S/ECMWF)

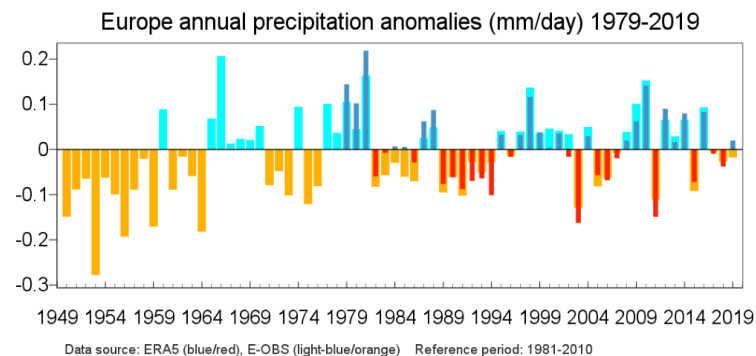


Drought monitoring from asset tables

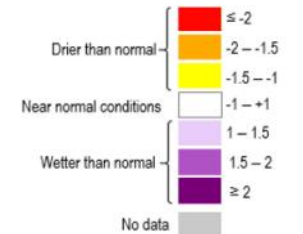
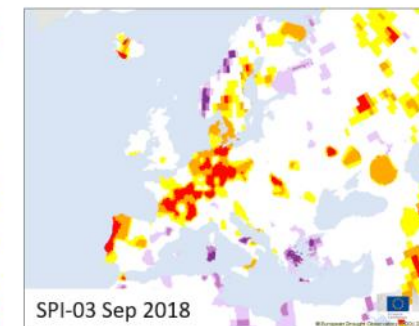
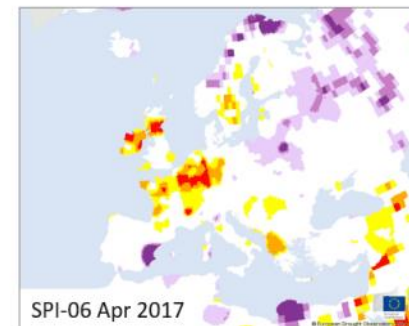
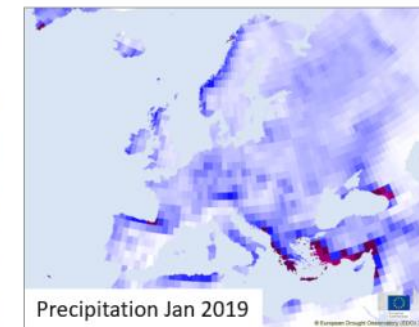
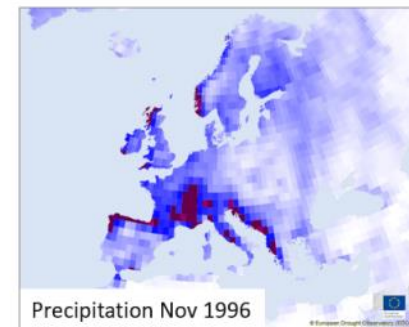


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- Standard Precipitation index
- River flow analysis
 - Dependency ratio (0÷1)
- Total natural renewable water resources *(maximum theoretical amount of water available for a country on an average year on a long reference period)*
 - Per capita renewable resources



EDO - European Drought Observatory



UN SDG No 6 – Clean Water & Sanitation



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- **6.1** By 2030, achieve universal and equitable access to safe and affordable drinking water for all
- **6.2** By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
- **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
- **6.4** 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
- **6.5** By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate
- **6.6** By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes
- **6.A** By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies
- **6.B** Support and strengthen the participation of local communities in improving water and sanitation management

6 CLEAN WATER AND SANITATION



**WATER
ACTION DECADE**
— 2018-2028 —



Global status of Indicator 6.4.1

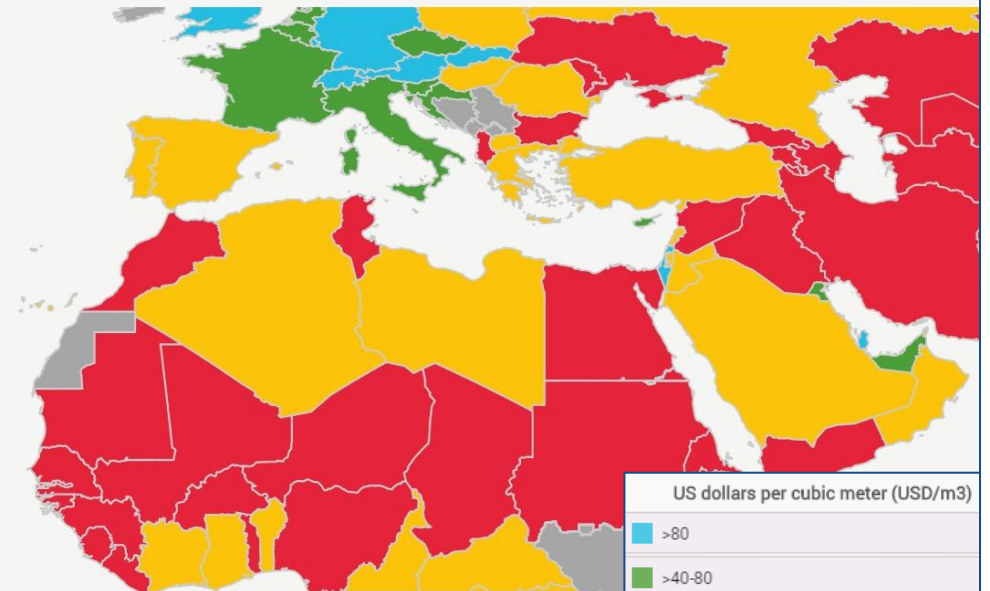
Change in water-use efficiency over time



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- Indicator 6.4.1 tracks the value added in US dollars per volume of water withdrawn in cubic meters, by a given economic activity over time
- It considers water use by all economic activities, with a focus on agriculture, industry and the service sector

6.4.1 Change in water-use efficiency over time (2015)



Data source: FAO
Exported from UN-Water <https://sdg6data.org> on 9 Oct 2020

US dollars per cubic meter (USD/m3)	
>80	
>40-80	
>10-40	
0-10	
Data not available	
Not applicable	



Global status of Indicator 6.4.2

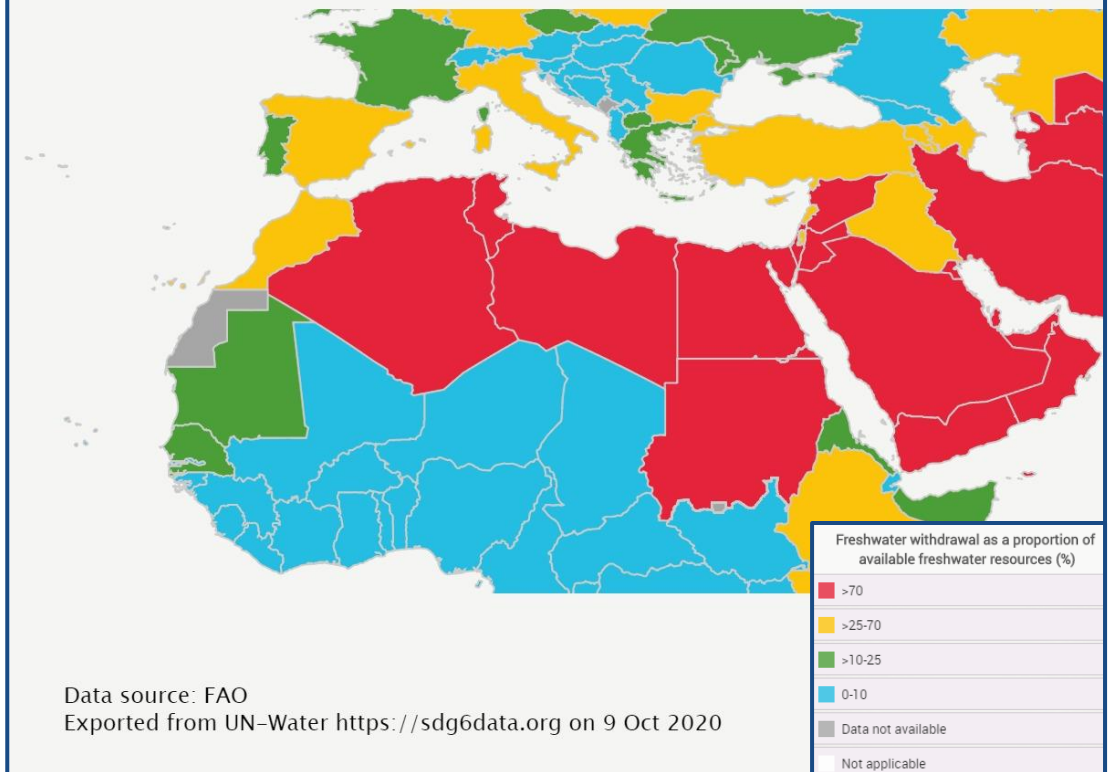
Level of water stress



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- Indicator 6.4.2 tracks how much freshwater that is being withdrawn by all economic activities, compared to the total renewable freshwater resources available
- It also considering also **environmental flow requirements**

6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources (2017)

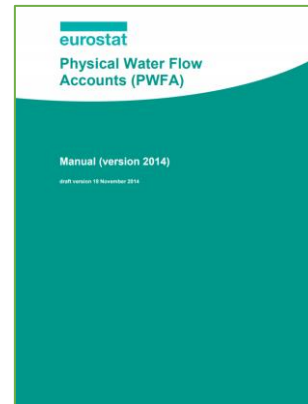
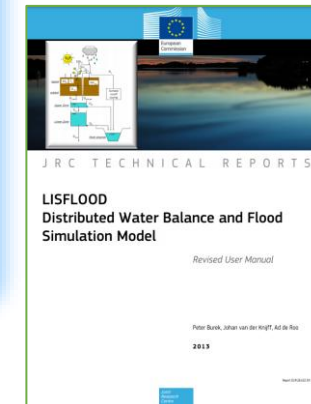
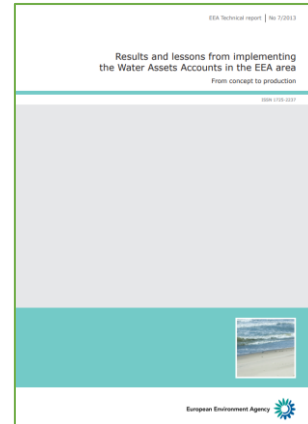
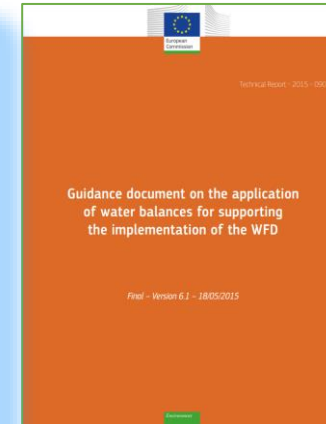


EU - Work on environmental accounting



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- 2012 – Review of the European Water Scarcity and Droughts Policy
- 2012 – Blueprint
- 2014 – ATG on Water accounts
- 2015 – Guidance document
- EEA [WISE European water accounts database](#)
- DG Eurostat is expanding the scope of its water statistics working group to cover water accounts
- DG JRC developed and operate LISFLOOD model for water available and policy assessment (2013-present)



Source: CIRCA BC [link](#)





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Thank you for your attention!

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