Adjustment of H2020 Water indicators

Webinar on the implementation of the Shared Environmental Information System (SEIS) principles and practices in the ENP South region

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Objectives

- In support of the achievement of Objective 2 of the "H2020 Review and Monitoring Group Work Programme 2015-2020," the main objectives are to:

  - Present and discuss the further development of H2020 Water Indicators for Phase II of ENI SEIS
  - Present methodological aspects for a selection of proposed adjustments and new indicators, in line with H2020 and on going initiatives (MSSD, NAPs, SDGs etc)

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Outline of Presentation

1. H2020 Core Water Indicators
2. Approach for further development and extension
3. For each Water indicator (IND 3-5)
   - Results from Phase 1 of ENI-SEIS
   - Links with existing indicators
   - Identified challenges
   - Points for consideration

4. Proposed "Satellite" Indicators
5. Adequacy of new indicators
   - DPSIR Distribution
   - Selection criteria
6. Conclusions

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1. H2020 Core Water Indicators

- Maintain the 3 existing Water Indicators

IND 3	Share of population with access to an improved sanitation system (total, urban, rural)
IND 4	Volume of waste water collected, of which volume of waste water treated (and type of treatment)
IND 5	Nutrient concentrations in transitional, coastal and marine waters

- Further development and extension

2. Approach for further development and extension

→ Identification of the **methodological shortcomings and challenges** of the H2020 core indicators (IND3- IND5) identified in Phase I of the ENI SEIS project and proposal for way forward;

→ Identification of the methodological aspects of the **proposed "satellite" indicators**/supplementary information;

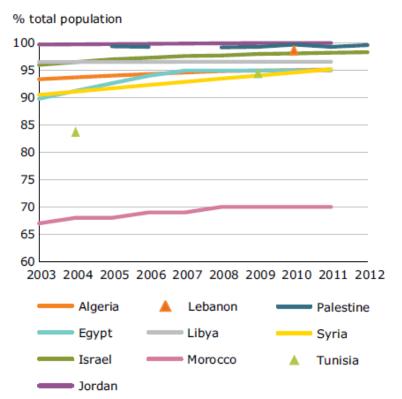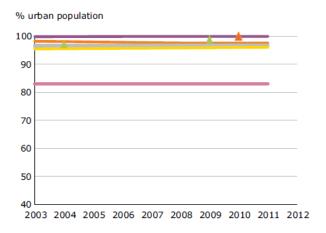→ Justification and adequacy of the proposed indicators through the application of **a set of selection criteria**.

IND 3	Share of population with access to an improved sanitation system (total, urban, rural)

Results from Phase 1 of ENI-SEIS

% total population

% urban population

% rural population

Legend:
- Algeria
- Lebanon (▲)
- Palestine
- Egypt
- Libya
- Syria
- Israel
- Morocco
- Tunisia (▲)
- Jordan

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IND 3	*Share of population with access to an improved sanitation system (total, urban, rural)*

Links with existing indicators

⇔ **MSSD indicator 2.14 and core NAP indicator EO5 #1**

⇔ **MDG Indicator 7.9**: *Proportion of population using an improved sanitation facility*

⇔ **SDG 6.2.1** *has been slightly revised: "Proportion of population **using safely managed sanitation services**, including a hand-washing facility with soap and water"*
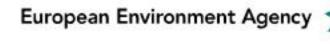
Indicator is extended to consider the **management aspects of sanitation**, not just the access (link IND 4)

Keep the current definition in line with the ongoing process in MAP system, while investigating linkages with "safely managed sanitation system", whenever possible

IND 3	*Share of population with access to an improved sanitation system (total, urban, rural)*

Identified Challenges

Geographical Scope:
In Phase 1, most of data was at <u>national level</u> (exception of Morocco)

→ In the context of H2020, it is most relevant to get information at sub-regional level, within the coastal watershed

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IND 3	*Share of population with access to an improved sanitation system (total, urban, rural)*

For consideration

- Availability of data at relevant geographical scale
- Need to provide capacity building for downscaling data

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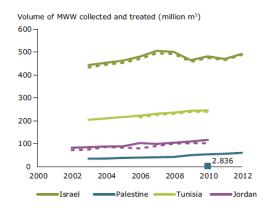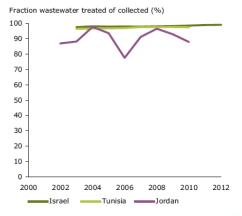
IND 4	Volume of waste water collected, of which volume of waste water treated (and type of treatment)

Results from Phase 1 of ENI-SEIS

Volume of wastewater collected and treated in 2003 and 2010

	Volume collected (million m³)		Volume treated (million m³)		Percentage of treated wastewater as a fraction of volume collected (%)		Increase in volume collected (%)	Increase in volume treated (%)
	2003	2010	2003	2010	2003	2010	2003–2010	2003–2010
Algeria	-	150	-	150	-	100	-	-
Egypt	-	6 500 (2011)	1 900 (2002)	4 800 (2011)	-	73.8	-	152.6 (2002–11)
Israel	443	480.7	432.5	473.8	97.6	98.6	8.5	9.6
Jordan	85.46	117.2	75.4	103	88.2	87.9	37.1	36.6
Lebanon	69 (2001)	103 (2009)	-	-	-	-	49.3 (2001–09)	-
Morocco	-	-	-	124	-	-	-	-
Palestine	35.6	54.3	-	2.84 (*)	-	-	52.5	-
Tunisia	204.8 (**)	245.6	197.6 (**)	239.6	96.5	97.6	19.9	21.3

Volume of MWW collected and treated (million m³)

Legend: Israel, Palestine, Tunisia, Jordan

Fraction wastewater treated of collected (%)

Legend: Israel, Tunisia, Jordan

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IND 4	*Volume of waste water collected, of which volume of waste water treated (and type of treatment)*

Links with existing indicators

⇔ **SDG indicator 6.3.1**: *Proportion of wastewater safely treated*
⇔ **MSSD indicator 2.5**: *Percentage of wastewater treated*
⇔ **Core NAP indicators EO5 #2 and #3**

IND 4	*Volume of waste water collected, of which volume of waste water treated (and type of treatment)*

Development of IND 4
Complemented by additional information

- ➢ Volume of wastewater generated
- ➢ Type of treatment (primary, secondary, tertiary)
- ➢ **Wastewater treatment infrastructure:**
  - design/actual capacity
  - age
  - performance over time

- ➢ **Quality of effluent** (under IND 4, not IND 5)
- ➢ **Volume of (treated) wastewater re-used**

IND 4	*Volume of waste water collected, of which volume of waste water treated (and type of treatment)*

Identified challenges

- Data not regularly collected

- Geographic scale more adequate at coastal watershed, possibly disaggregated for each WWTP – Data availability?

- Volume of wastewater collected expressed in terms of "population equivalent"

- Fraction of wastewater uncollected is not accounted for

Volume of waste water collected can be expressed in terms of "**population equivalent**" (p.e.) – an expression of wastewater BOD contribution per capita, as compared to the BOD of standard wastewater

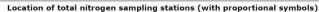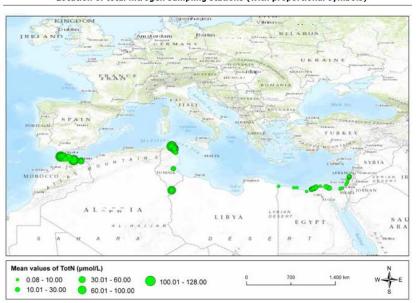➔ ***Provides additional information for assessing improvements in WWT***

IND 5	Nutrient concentration in transitional, coastal and marine waters

Results from Phase 1 of ENI-SEIS

Location of total nitrogen sampling stations (with proportional symbols)

Mean values of TotN (µmol/L)
- 0.08 - 10.00
- 10.01 - 30.00
- 30.01 - 60.00
- 60.01 - 100.00
- 100.01 - 128.00
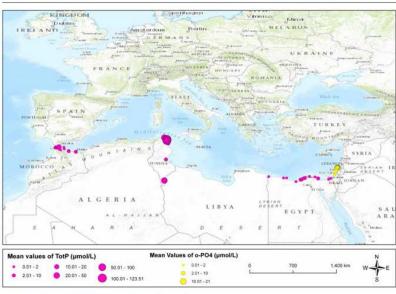
Source: UNEP/ MAP/MED POL Monitoring database, 2011.

Location of total phosphorus and orthophosphate sampling stations (with proportional symbols)

Mean values of TotP (µmol/L)
- 0.01 - 2
- 2.01 - 10
- 10.01 - 20
- 20.01 - 50
- 50.01 - 100
- 100.01 - 123.51

Mean Values of o-PO4 (µmol/L)
- 0.01 - 2
- 2.01 - 10
- 10.01 - 21

Source: UNEP/MAP/MED POL monitoring database, 2002–2011.

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IND 5	Nutrient concentration in transitional, coastal and marine waters

Links with existing indicators

⇔ **Common Indicator 13**: *Key nutrients concentration in water column*
being developed under IMAP, as part of Ecologic Objective 5:

Human-induced eutrophication is prevented, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algal blooms and oxygen deficiency in bottom waters.

IND 5	Nutrient concentration in transitional, coastal and marine waters

Identified challenges (IMAP Indicator Assessment Factsheet)

- Criteria for reference condition and boundaries for key nutrients in the water column have to be built and harmonised through the Mediterranean region;

- Coastal Water types for key nutrients in the water column have to be built and harmonised through the Mediterranean region;

- A clear sampling strategy with a simplified approach in monitoring design and data handling needs to be developed.

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IND 5	Nutrient concentration in transitional, coastal and marine waters

Development of IND 5

Proposal to look at **Bathing Water Quality**

e.g. EEA bathing water quality indicator: % of inland and coastal bathing waters in compliance with standards introduced by the EU Bathing Water Directive (76/160/EEC), which includes microbiological parameters (total coliforms and faecal coliforms)

- Availability of data for **bathing water quality** in ENP South countries
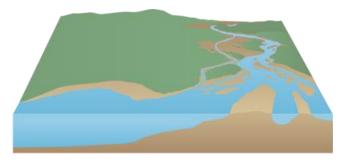
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4. "Satellite" Indicators

Phase II of H2020 **extended to include marine and freshwater**

Address water resources, with particular focus on **water scarcity/water shortage** issues as well as **non-conventional water resources**

Several Indicators can be considered:

- Change in water-use efficiency over time (SDG 6.4.1) – Water efficiency index (MSSD 2.2)
- Exploitation index of renewable natural resources (MSSD 2.12)
- Water Exploitation Index+ (EEA CSI 018)
- Level of water stress - freshwater withdrawal as a proportion of available freshwater resources (SDG 6.4.2, SCP 2.1)

"Satellite" Indicators
No reporting expected as compared to the Core H2020 Indicators

No specification/assessment sheets will be developed under H2020

Strengthen the regional assessment and support the capacity of the countries to address these indicators

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5. Adequacy of new indicators - *DPSIR Distribution*

		Indicator	Sub-Indicator/ Suporting information	DPSIR Framework				
				Driver	**Pressure**	**State**	**Impact**	**Response**
CORE INDICATORS								
Water	IND 3	Share of total, urban and rural population with access to an improved sanitation system						
Water	IND 4	Volume of wastewater collected, of which volume of wastewater treated						
Water	IND 4	Volume of wastewater collected, of which volume of wastewater treated	Type of treatment					
Water	IND 5	Nutrient concentrations in transitional, coastal and marine waters						
NEW INDICATORS				"x" - contributing to a balanced distriution across DPSIR				
Water	*IND 4*	Volume of wastewater collected, of which volume of wastewater treated	*WWT Infrastructures (design/actual capacity, age, performance, etc)*					
	IND 4	Volume of wastewater collected, of which volume of wastewater treated	*Volume of (treated) wastewater re-used*					
Water	*IND 5*	Bathing Water Quality	*E. coli (Bathing water quality)*			x	x	
Water	*IND 4/5/?*	Nutrients/ Quality of effluents	*Nutrients from Municipal WWT effluents*		x			
Water	*Satelite Indicators*	Water Resource Management	Water Efficiency Index (MSSD 2.2); Change in water-use efficiency over time (SDG 6.4.1); Water Exploitation Index+ (EEA CSI 018); Level of water stress (SDG 6.4.2, SCP2.1)	x	x			

5. Selection Criteria

1	*Be simple, straight-forward, concise, easy to interpret*
2	Be issue specific yet relevant to all countries
3	Build on existing indicators process in the region to ensure full use of existing information and data
4	Provide realistic and representative baseline of the current situation
5	Contribute to a balanced DPSIR distribution
6	Provide a comprehensive, yet non-exhaustive coverage of the priority areas
7	Allow for periodic review and update in line with future developments
8	*Is in line with extension of H2020 scope*
9	*Allow for indepth analysis in relation to previous assessments*
10	*Is able to reflect the effectiveness/impact of new investments*
11	*Is relevant to other regional processes (eg EcAP, MSSD)*
12	*To a large extent answers the key H2020 policy question: "What is the progress in depolluting the Mediterranean Sea?"*

Criteria 1-7 were used in ENI SEIS I
Criteria 8-12 added to provide a more comprehensive analysis and assess the added value of new indicators

5. Adequacy of new indicators
- *Selection criteria*

		1	2	3	4	5	6	7	8	9	10	11	12	SCORE
IND 4	*WWT Infrastructures (design/actual capacity, age, performance, etc)*	5	10	1	10	5	5	10	5	10	10	1	5	77
IND 4	*Volume of (treated) wastewater re-used*	10	5	1	10	5	10	10	10	10	5	1	1	78
IND 5	*E. coli (Bathing water quality)*	10	10	5	5	10	5	10	5	10	10	5	10	95
IND 4/5/?	*Nutrients from Municipal WWT effluents*	5	10	5	10	10	5	10	5	10	10	10	10	100
Satellite indicators	*Water Efficiency Index (MSSD 2.2); Change in water-use efficiency over time (SDG 6.4.1); Water Exploitation Index+ (EEA CSI 018); Level of water stress (SDG 6.4.2, SCP2.1)*	5	10	10	10	5	1	5	10	10	1	10	1	78

LEGEND

Rate   *the extent to which indicator fulfils criterion*

- Positive/large extent
- Neutral
- Negative /low extent

6. Conclusions

- Building on achievements of H2020 Core Water Indicator
  - Methodological shortcomings encountered in Phase 1
  - Identified gaps and limitations

- Streamlining with ongoing initiatives
  - SDG, MSSD, EcAP/IMAP, NAPs

- Taking into account extended scope of H2020
  - Marine & freshwater
  - Strengthen H2020 regional assessment

- Define next steps
  - Review indicator specification sheets

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Thank you
Merci
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Any questions?

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