# 2nd ENI SEIS II South Support Mechanism
# Regional Workshop on Indicators

## Athens (Greece), 17-18 April 2018

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UN environment
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Mediterranean Action Plan
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# Adjustment of H2020 Water indicators

**Concept note**

Date: 16 February 2018

## Contents



**Note:** This document has been updated following the Webinar on Water Indicators with countries (27th September, 2017) and the 2nd Steering Committee of the ENI SEIS II South (Barcelona, 16th-18th October, 2017). After consultation with countries on data availability and discussions with UNEP/MAP, the list has been further adjusted in 16 February 2018. Indicator on *Municipal wastewater produced* and *Wastewater treated in P.E.* were removed, while a new indicator on *Release of nutrients from municipal effluents* was included.

## 1. Background

The UfM Ministerial meeting on Environment and Climate Change, held in Athens on 13 May 2014, emphasized for the 2nd phase the need for all partner countries "to address data needs by applying the principles of Shared Environment Information Systems (SEIS) in line with the commitments under the ECAP Decisions of the Barcelona Convention; also contributing to its regional integrated monitoring." UfM Ministers gave the H2020 Steering Group the mandate to develop and adopt a work programme for the second phase in line with the on-going ECAP/MSFD work, the update National Action Plans (NAPs) and MSSD review.

The 1st ENI SEIS II South Support Mechanism Regional workshop on indicators, 17-18 May 2017, Copenhagen, initiated the refinement of the H2020 review mechanism to: i. further develop the current H2020 indicators to reflect the renewed scope of the H2020 priorities applicable to all Mediterranean countries, and ii. take into account other existing indicators sets in coherence with other assessment processes. The meeting reviewed existing regional indicators processes and their links with H2020 and discussed possible amendments of the current set. The meeting provided a way forward for an agreed selection of indicators, which should be further explored at country and regional level. Three thematic webinars (Industrial Emissions, Waste and Water) have been scheduled with countries during September 2017 to discuss and agree on a final list of indicators. The webinar on the H2020 Water Indicators took place on the 27th September 2017.

## 2. Objectives

This document intends to be a basis to support the development of the H2020 Water indicators for the ENI SEIS II South project. It specifically aims at:

- Providing the rationale and discuss the further development of H2020 Water Indicators for Phase II of ENI SEIS, based on the experiences of Phase I and in line with H2020 and ongoing initiatives (e.g. MSSD, NAPs, SDGs);
- Presenting the approach used for the selection of proposed adjustments and new indicators;
- Presenting the proposed list of new indicators and additional information for the existing 3 Water core indicators.

The proposals presented are based on the outcomes of the Workshop on Indicators and subsequent refinement following the discussions and input received during the Water Webinar with countries.

## 3. Existing H2020 Core Water Indicators

During the discussions at the May workshop, participants agreed to keep the 3 existing water indicators, with some adjustments. The existing H2020 core water indicators, defined in Phase I of SEIS, are:

| | Name of indicator | Link to Indicator Specification sheet developed under Phase 1 |
|---|---|---|
| **IND 3** | Share of population with access to an improved sanitation system (total, urban, rural) | IND 3 Specification sheet |
| **IND 4** | Volume of waste water collected, of which volume of waste water treated (and type of treatment) | IND 4 Specification sheet |
| **IND 5** | Nutrient concentrations in transitional, coastal and marine waters | IND 5 Specification sheet |

These indicators are complementary to other existing indicators from ongoing global/regional initiatives, such as SGD, MSSD, IMAP, NAPs. These links are identified in the sections below. It is assumed that if the same indicator is already reported under parallel processes (e.g. SDG), it should not be reported again under H2020 in accordance to the principles of SEIS. However, in most other cases, the further development of H2020 indicators is considered as a mechanism to support progress under other initiatives (e.g. MSSD, NAPs).

## 4. Approach for developing water indicators

The proposed approach for the elaboration of the H2020 Water indicators is as follows:

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

ii. Identification of the methodological aspects of the proposed additional elements for “core indicators” and proposed “supporting indicators”

iii. Justification and adequacy of the proposed water indicators further developed under ENI SEIS II South project through the application of a set of selection criteria.

## 5. Discussion and adjustment of H2020 indicators

In this section, the Core Water Indicators (IND 3, IND 4, IND 5) and their adjustments or extensions proposed for ENP SEIS South Phase 2 are presented and discussed. It includes challenges identified in Phase 1 and a few points that have been presented to the countries for consideration.

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

Lack of sanitation poses health risks from contaminated drinking water to life-threatening forms of diarrhea to infants, particularly for poorer segments of the population who are most exposed to inadequate human waste disposal. This indicator gives an indication of the accessibility to sanitation services, e.g. sewerage network.

Links with existing indicators

IND 3 corresponds to Millennium Development Goals (MDGs; 2000-2015) Indicator 7.9: Proportion of population using an improved sanitation facility. Under the Sustainable Development Goals (SDGs; 2015-2030), the definition of the sanitation indicator (SGD 6.2.1) has been (slightly) revised by referring to "safely managed sanitation services" instead of "improved sanitation systems". The new SDG Indicator 6.2.1 *Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water* is defined as the population using an improved sanitation facility which is not shared with other households and where excreta is safely disposed in situ or treated off-site. This indicator builds on the MDG indicator of the population using an improved sanitation facility, and adds new elements addressing aspects of hygiene, faecal waste and wastewater management which were not included in MDG monitoring.

IND 3 also corresponds to MSSD indicator 2.14 (See MSSD Factsheet in Annex II) and core NAP indicator EO5(1) (Annex III).

***Identified challenges***

- **Geographical scope**: In ENP SEIS Phase 1, most of the data obtained for IND 3 was at the national level, with the exception of Morocco that provided data for the coastal watersheds the 16 provinces and prefectures in the coastal hydrological basins of Oued Moulouya and Tangier in the Mediterranean region. Within the context of H2020, it is most relevant to get more information at the sub-regional level, namely at the coastal watershed level[1] (see also Annex IV). However, data at this level may not be available for most countries. There is a need to provide capacity building on developing methodological options for downscaling national data to the coastal watershed level.

***Points considered***

- Change in the exact definition of the SDG indicator as compared to MDG (from improved sanitation system to safely managed sanitation services) and core NAP indicator EO5(1). Since the MSSD indicator 2.14 will be adjusted to the new SDG definition, we propose to

[1] Coastal watershed data is mainly of relevance for Algeria, Morocco, Tunisia, Libya, Egypt, Jordan. For other countries, such as, Israel, Lebanon and Palestine, the national territories (i.e. not only the Mediterranean hydrological basins) could be considered as the coastal hydrological basins, as in Phase 1.

follow this adjustment, while maintaining reference to the previous indicator for time-series continuity.

***Input from Webinar with Countries***

- **Tunisia**: No data for sanitation in rural areas. They have just started a project on sanitation in these areas.
- **Palestine**: Supports the alignment with SDGs (e.g. in relation to IND3) but raises some concerns about metadata not yet available for certain SDG indicators yet (Tier III).

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

The discharge of untreated wastewater directly in freshwater, coastal and marine environments causes enormous health concern. It also represents a significant pressure on aquatic ecosystems as wastewater carries high loads of nutrients (nitrogen and phosphorus), and pathogenic micro-organisms (including coliforms, faecal streptococcus, salmonella etc.). In cities, sewage discharged directly into public sewerage systems generally contains a variety of chemical wastes originating from households and industrial installations.

Links with existing indicators

IND 4 corresponds to SDG indicator 6.3.1 Proportion of wastewater safely treated (indicator classified by SDG process as Tier II[2]; no SDG metadata file available yet); MSSD indicator 2.5 Percentage of wastewater treated (related MSSD factsheet available) and core NAP indicators EO5(2) and EO5(3) – see Annex III and points for consideration below.

Development of IND 4

During the May workshop it was proposed to complement this indicator with more information about the WWTP infrastructure such as **design/actual capacity, age, performances over time**, and with the **quality of effluents** (taking into account information on national standards on effluent quality, following the Regional Plan on reduction of $BOD_5$ under the framework of the LBS Protocol – Decision IG.19/7 and the Appendix B – Guidelines on National Budget of Pollutants (NBB)).

Another extension of IND 4 should include the use of non-conventional water resources, e.g. treated wastewater and desalinated water. In the context of IND 4, it would be logical to strengthen the collection of data and information on the extent of **reuse of treated waste water**.

***Identified challenges***

- As for IND 3, the most logical geographical scope would be the coastal watershed. That would require the reporting of disaggregated data (volume collected; volume treated; quality of effluent; information on wastewater infrastructure) for each WWTP (above a certain capacity) that falls within the coastal watershed.
- In ENP SEIS Phase 1, the data collected for this indicator had a number of gaps. In some countries, the required dataset is not regularly collected. The results of the metadata survey are expected to provide more information on the availability of data.
- Reported data in Phase 1 showed that the volume of treated wastewater follows closely the volume of collected wastewater. This could be explained by the fact that the volume of wastewater collected is estimated based on the volume of wastewater entering the WWTPs, whereas the volume of wastewater treated is estimated on wastewater leaving the WWTPs. However, this doesn't give a clear picture of the performance of the WWTPs and effectiveness of the wastewater management and treatment.

[2] Tier II: Indicator is conceptually clear, has an internationally established methodology and standards are available, but data are not regularly produced by countries.

- Another shortcoming of the indicator is that the fraction of generated wastewater that remains uncollected (and therefore untreated) is not accounted for.

***Points considered***

- This indicator can be also expressed in terms of population equivalent (p.e.)[3]; an expression of the per capita contribution of wastewater BOD, as compared to the BOD of standard wastewater. Thus the p.e. indicates the number of people who would be responsible for the wastewater that has the same characteristics (e.g. BOD) as standard wastewater. P.e. is a useful index of the strength of wastewater for the purpose of treatment at a municipal WWTP. When compared to volumes, it provides additional information for assessing changes due to wastewater treatment. In both EC definition and Decision IG.19/7, p.e. = 60 g.

- During the May workshop, the quality of WWTP effluents was discussed under IND 5 "Nutrient concentrations in transitional, coastal and marine waters". However, it would be more logical to include it as an extension of IND 4, as part of the information on the effectiveness of the wastewater management and treatment.

***Input from Webinar with Countries***

- Countries indicated that there is a limitation on **availability of disaggregated** data at the sub-regional level.
- **Jordan**: Pointed out that the proposed additional information under IND4 on WWT infrastructure is a very important addition. Missing an indicator that addresses the emissions from olive mills, an important issue in Jordan and many other Mediterranean countries.
- **Palestine**: Data on WWT Infrastructure (IND4) can be attempted to be collected.

[3] OECD definition of Population equivalent (in waste-water monitoring and treatment): PE refers to the amount of oxygen—demanding substances whose oxygen consumption during biodegradation equals the average oxygen demand of the waste water produced by one person. For practical calculations, it is assumed that one unit equals 54 grams of BOD per 24 hours. p.e.) https://stats.oecd.org/glossary/detail.asp?ID=2086
EC definition: The organic biodegradable load having a five-day biochemical oxygen demand (BOD5) of 60 g of oxygen per day http://ec.europa.eu/environment/water/water-urbanwaste/info/glossary_en.htm

## IND 5 - Nutrient concentrations in transitional, coastal and marine waters

Although the main body of water of the Mediterranean is characterized by very low nutrient concentrations, some coastal hotspots receive excessive loads of nutrients from sewage effluents, river fluxes, aquaculture farms, fertilizers, and industrial facilities, resulting into intense eutrophic phenomena with adverse effects for the marine ecosystem and humans. This explains why eutrophication in the Mediterranean is mostly limited to coastal areas, enclosed bays, river estuaries, coastal lagoons or embayments with restricted water exchange with the open sea. Although eutrophication has been more intense in the Northern part of the basin, special attention also has to be paid to the Southern part where the population keeps on growing steadily, agricultural and industrial activities are in rapid development and sewage treatment facilities are still lacking behind.

Links with existing indicators

IND 5 corresponds to the 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.* Its further development will be streamlined with the development of IMAP indicators.

Development of IND 5

The Workshop participants also proposed to look at **Bathing Water Quality**.

In the Mediterranean region, a number of assessments of the state of microbial pollution have been carried out in collaboration with World Health Organization (e.g. UNEP/WHO 1996 MTS 108; UNEP/MAP-MED POL/WHO 2008 MTS 170). The MAP Technical Reports Series (MTS) no. 108 consolidates and updates all data from 1985-1995 on the state of microbiological pollution of the Mediterranean Sea regarding coastal recreational and shellfish growing areas. Monitoring data were submitted from national MED POL monitoring programmes, MED POL research projects, EC annual reports on bathing waters and other national and international sources. The more recent MTS 170 provides a series of data on microbial pollution in the Mediterranean Sea during the 1996-2006 decade based on the results of compliance monitoring programmes that highlight directly the degree of compliance to the national, Mediterranean or EC legislation. In addition, it shows the trend with respect to compliance monitoring and compares the data with the results of the 1996 report.

The EEA bathing water quality indicator (EEA CSI 022) describes the changes over time in the quality of identified bathing waters (inland and coastal) in EU in terms of compliance with standards for parameters introduced by the EU Bathing Water Directive (76/160/EEC), i.e. microbiological parameters (total coliforms and faecal coliforms) and physicochemical parameters (mineral oils, surface-active substances and phenols), as well as in terms of meeting standards for parameters introduced by the New Bathing Water Directive (2006/7/EC), i.e. microbiological parameters (intestinal enterococci and *Escherichia coli*). The revised Bathing Water Directive (BWD) of 2006 updated and simplified these rules. It requires Members States to monitor and assess the bathing water for at least two parameters of (faecal) bacteria. In addition, they must inform the public about bathing water quality and beach management, through the so-called bathing water profiles. These

profiles contain for instance information on the kind of pollution and sources that affect the quality of the bathing water and are a risk to bathers' health (such as waste water discharges).

The data are expressed in terms of percentage of inland and coastal bathing waters complying with the mandatory values and guide values for microbiological and physicochemical parameters (assessment under the Bathing Water Directive (76/160/EEC) in previous years) and with the mandatory value for *E.coli* and guide values for *E.coli* and intestinal enterococci respectively (assessment during transition period). The data are also expressed in terms of percentage of inland and coastal bathing waters of excellent and at least sufficient quality (assessment under the New Bathing Water Directive (2006/7/EC).

Following the adoption of the new EC Directive, Mediterranean countries adopted criteria and standards that comply with both the EC Directive and the WHO Guidelines (Decision IG.20/9). The revised criteria and standards require monitoring, assessment and classification of bathing water quality status that is referred to as “excellent”, “good”, “sufficient” and “poor quality”, with each qualification linked to clear numerical quality standards of bacteriological quality (Annex V).

IMAP includes one common indicator on bathing water quality – Indicator 21: *Percentage of intestinal enterococci concentration measurements within established standards* (EO9).

***Identified challenges***

As identified in IMAP Indicator Assessment Factsheet, the main challenges associated to IND 5 are:

- 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.

***Points considered***

- The data required for an eventual bathing water quality indicator should be available in ENP South countries

***Input from Webinar with Countries***

- **Israel**: Israel monitors bathing water quality but uses intestinal *enterococci* as main indicator, as they concluded is a better indicator for faecal contamination in marine waters. Available national standards on bathing water quality should be taken into consideration.
- **Jordan:** Data exists for swimming pools and bathing sites.
- **Palestine**: They will consult internally to check regulations and requirements on bathing water quality.
- **Tunisia**: Limitation on data availability for water quality and disaggregation at sub-regional level.

## 6. Proposed "supporting indicators" on water resource management

Taking into account the enlarged scope of the second phase of H2020 to the whole water area (freshwater and marine), participants of the May workshop pointed out the importance to address water resources with a particular focus on water scarcity/water shortage issues as well as non-conventional water resources (see also section on IND 4).

Several indicators have been identified in existing lists that may be considered in the context of H2020. These include:

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

The proposed indicators on water resource management should be considered as "supporting indicators", as a way to distinguish them from the "core" H2020 indicators. Given the core scope of the H2020 Initiative to "Depollute the Mediterranean Sea" and its tight timeframe, it is considered that although the supporting indicators could be used to strengthen the regional assessment, their development will not go as far as that of the core indicators. This implies that no specific specification/assessment sheet will be produced as part of the ENP-SEIS II South project and no reporting on these indicators is expected by the countries under the H2020 Initiative. However, the capacity of the countries to produce these indicators in the future will be assessed and support on their development for the purpose of other reporting obligations/initiatives, will be provided, as necessary.

Methodological details of these indicators are included in Annex I.

***Input from Webinar with Countries***

- **Tunisia**: Agreement to include water resource indicators, as water scarcity is an important issue for Tunisia. Suggestion to add an indicator on water desalination (non-conventional water sources).

## 7. Other information

For this sector, participants of the May indicator workshop raised the importance to explicitly introduce **climate change** as a key driver of change.

The aspects of water governance, water pricing, awareness raising and the nexus pollution/public health have also been identified as relevant elements to be further explored and analysed in the framework of H2020 – in particular in relation with long term investments and post 2020 vision. These aspects will not be addressed using specific H2020 indicators (neither core nor supporting indicators).

## 8. Consolidation of the proposed list of water indicators for SEIS Phase II

Based on the input received from the countries during the May workshop and Water webinar, the new set of H2020 Water indicators are proposed and organised as follows:

| WATER | "Meta-Indicator " / Policy Theme | Indicator |
|---|---|---|
| **IND 3** | ***Access to Sanitation*** | **3.1** Share of total, urban, rural population with access to an **improved sanitation** system<br><br>**3.2** Proportion of population using **safely managed sanitation services**, including a hand-washing facility with soap and water |
| **IND 4** | ***Municipal Wastewater Management*** | **4.1** Volume of wastewater **collected**, of which volume of wastewater **treated**<br><br>Additional information:<br>• Wastewater Treatment Infrastructure (Actual capacity of functional facilities; total nr of functional facilities);<br>• Type of Treatment (primary, secondary, tertiary);<br><br>**4.2** Volume of (treated) wastewater **re-used**<br><br>**4.3 Release of nutrients** from municipal effluents (total loads of $BOD_5$, Nitrogen and Phosphorus discharged into the Mediterranean) |
| **IND 5** | ***Coastal and Marine Water Quality*** | **5.1 Nutrient concentrations** in transitional, coastal and marine waters<br><br>**5.2 Bathing Water Quality** (Enterococci) |
| **Supporting Indicators**<br><br>(new in Phase II) | ***Freshwater resource management*** | • Water Efficiency Index (MSSD 2.2);<br>• **Change in water-use efficiency over time (SDG 6.4.1);**<br>• Water Exploitation Index+ (EEA CSI 018);<br>• **Level of water stress (SDG 6.4.2, SCP2.1)**<br><br>Specifically for the use of non-conventional sources of water:<br>• **Volume of seawater desalinised** |

- **Access to Sanitation**: The previous Indicator (*Share of total, urban and rural population with access to an improved sanitation system*) will be complemented by the new SDG 6.2.1 Indicator (*Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water*)

- **Municipal Wastewater Management**: will be extended to include indicators that reflect not only the input and output of WWTPs but also re-use of wastewater and the quality of effluents (loads of key nutrients discharged in the Mediterranean). Elements on WWTP infrastructure (actual capacity) and type of treatment will supplement the Indicators.

- **Coastal and Marine Water Quality**: will be complemented by bathing water quality of coastal waters, as a "State" or even "Impact" indicator, if considered from recreation/coastal tourism perspective.

- "Supporting Indicators" on **freshwater resource management**, following the extension of the H2020 scope to include freshwater systems. A few indicators from ongoing initiatives already exist that can be taken into consideration. Particularly relevant are the two SDG Indicators (6.4.1 Water Efficiency and 6.4.2 – Water Stress) and an indicator on Water Desalination, which also links to the issue of water scarcity and use of non-conventional sources of water.

## Annex I – Methodological Details of Proposed "Supporting Indicators"

### 1. Change in water-use efficiency over time (SDG 6.4.1) – Water efficiency index (MSSD 2.2)

**6.4.1 Change in water-use efficiency over time**: Classified by SDG process as Tier III[4] for which no metadata file is yet available.

**Water efficiency index (MSSD 2.2)**: MSSD factsheet_ Water Efficiency Index and PEGASO Water Efficiency Index methodological factsheet.

This index allows the monitoring of progress in terms of the water saved as a result of the demand to reduce the water loss and wastage during the process of both the transport and the use. It is subdivided into total and sectoral efficiency (drinking water, agriculture and industry).

### 2. Exploitation index of renewable natural resources (MSSD 2.12)

Although this indicator is an MSSD indicator, no indicator factsheet is yet available under the revised MSSD. *This implies that either the indicator is still under development and may be modified, adapted or replaced as necessary.* According to 2006 MSSD Factsheet, this indicator measures the relative pressure of annual abstraction (A) over traditional renewable natural drinking water resources (R).

(A / R) x 100

A: Amount of annual traditional renewable natural water volumes consumed for all other purposes, including volume losses during transport ;

R: Annual traditional renewable natural water flow volume. Country resources are individually defined by surface run-off and underground flows, either formed or entering the territory. Volumes are measured on the basis of hydrological data, in reference to average values over sufficiently long periods to ensure stability, and to avoid double accounting of surface and underground water.

The renewable resources exploitation index can sometimes exceed 100%.

### 3. Water Exploitation Index+ (EEA CSI 018)

The WEI+ is a water **scarcity** indicator that provides information on the level of pressure that human activity exerts on the natural water resources of a particular territory. This helps to identify those areas prone to water stress problems. The purpose of implementing the WEI+ at spatial (e.g. sub-basin or river basin) and temporal (monthly or seasonal) scales, which are finer than the annual average at the country scale, is to better capture the balance between renewable water resources and water use. A detailed specification and assessment factsheet for WEI+ in Europe (EEA CSI 018) is available. Note that WEI+ differs from the previous WEI approach by enabling the depiction of more seasonal and regional aspects of water stress conditions across Europe.

[4] Tier III: No internationally established methodology or standards are yet available for the indicator, but methodology/standards are being (or will be) developed or tested

The regionalised WEI+ is calculated according to the following formula:

**WEI+ = (abstractions – returns)/renewable water resources**.

Renewable water resources are calculated as 'ExIn + P – Eta – ΔS' for natural and semi-natural areas, and as 'outflow + (abstraction – return) – ΔS' for densely populated areas.

Where: ExIn = external inflow; P = precipitation; ETa = actual evapotranspiration; ΔS = change in storage (lakes and reservoirs); outflow = outflow to the downstream/Sea.

It is assumed that there are no pristine or semi-natural river basin districts or sub-basins in Europe. Therefore, the formula 'outflow + (abstraction – return) – ΔS' is used to estimate renewable water resources.

The WEI+ is part of the set of water indicators published by several international organisations, such as the United Nations Environment Programme (UNEP), the Organisation for Economic Co-operation and Development (OECD), Eurostat and the Mediterranean Blue Plan. There is an international consensus about the use of this indicator.

Once water asset accounts are implemented according to the United Nations System of Environmental Accounting Framework for Water (2012), the necessary parameters for calculating water use and renewable freshwater water resources are harvested

4. **Level of water stress - freshwater withdrawal as a proportion of available freshwater resources (SDG 6.4.2, SCP 2.1).**

This SDG indicator measures the ratio between total freshwater withdrawn by all major sectors and total renewable freshwater resources, after taking into account environmental water requirements. Main sectors, as defined by ISIC standards, include agriculture; forestry and fishing; manufacturing; electricity industry; and services. This indicator is also known as **water withdrawal intensity** (SDG 6.4.2 Metadata-06-04-02). According to the SDG classification, it is classified as Tier II.

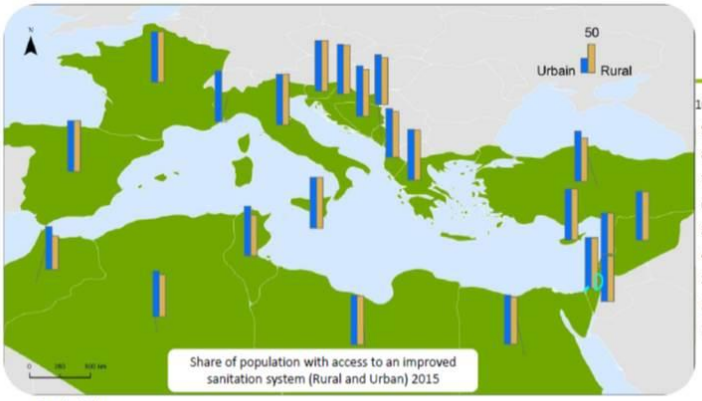
Total freshwater withdrawal (TWW) is the volume of freshwater extracted from its source (rivers, lakes, aquifers) for agriculture, industries and municipalities. It is estimated at the country level for the following three main sectors: agriculture, municipalities (including domestic water withdrawal) and industries. Freshwater withdrawal includes primary freshwater (not withdrawn before), secondary freshwater (previously withdrawn and returned to rivers and groundwater, such as discharged wastewater and agricultural drainage water) and fossil groundwater. It does not include non-conventional water, i.e. direct use of treated wastewater, direct use of agricultural drainage water and desalinated water. TWW is in general calculated as being the sum of total water withdrawal by sector minus direct use of wastewater, direct use of agricultural drainage water and use of desalinated water.

Total renewable freshwater resources (TRWR) are expressed as the sum of internal and external renewable water resources. The terms “water resources” and “water withdrawal” are understood here as freshwater resources and freshwater withdrawal. Internal renewable water resources are defined as the long-term average annual flow of rivers and recharge of groundwater for a given country generated from endogenous precipitation. External renewable water resources refer to the

flows of water entering the country, taking into consideration the quantity of flows reserved to upstream and downstream countries through agreements or treaties.

Environmental water requirements (Env.) are the quantities of water required to sustain freshwater and estuarine ecosystems.

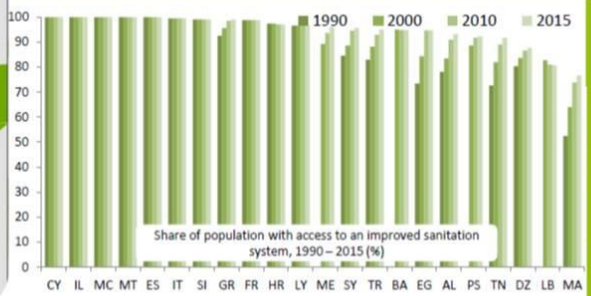
# Annex II – MSSD Indicator 2.14 Factsheet




## Is access to sanitation system improving?

RURAL & RESSOURCES

Access to an improved sanitation system




### Definition :

This indicator represents the population with access to a basic sanitation system for disposal of human excrement of households or the immediate neighborhood (public wastewater network, septic tanks, etc.). It is one of the Millennium Development Goals Indicators (n°31) and was proposed for the Horizon 2020 initiative.

### Precautions / Notes :

The fact that facilities are available does not mean that they are used. A town sanitation network should allow for the collection and evacuation of wastewater of all types (cess-water, household water, industrial water, etc.) while ensuring transporting it, the fastest way possible, to the place where it is treated (wastewater treatment plant).
Because of differences in the definition of urban population from one country to another, international comparisons can be biased. This indicator should be made more precise in the Mediterranean region in order to show the progress being made according to the type of wastewater collection (individual or collective) and the treatment methods.

### Sources / References :

United Nations Statistics Division, The Millennium Indicators Database.
The Millennium Development Goals Report 2012, United Nations.
WHO/UNICEF Joint Monitoring Programme (JMP) for the water supply and sanitation

Access to an improved sanitation system (not necessarily including waste water treatment) is important, especially in urban areas where the contact possibility of wastewater of the population is higher.

**In the Mediterranean, about 27 million people do not have access to an adequate sanitation system.**

In 2015, the proportion of the population with access to a sanitation system is about 77% in Morocco and 100 % in most of the northern Mediterranean countries.

The percentage of the urban population with access to a sanitation system is higher than 90%, with the exception of Morocco (84%), Lebanon (81 %).

The disparities between urban and rural areas are still great and the access rate in rural areas can be lower than 80% (Morocco, Tunisia).

The rate of the access to an improved sanitation system in the south and east Mediterranean countries (95%) is higher than the world average (about 78%). It is the same situation for the access rate in urban (96%) and rural areas (88%).

UNEP Plan Bleu

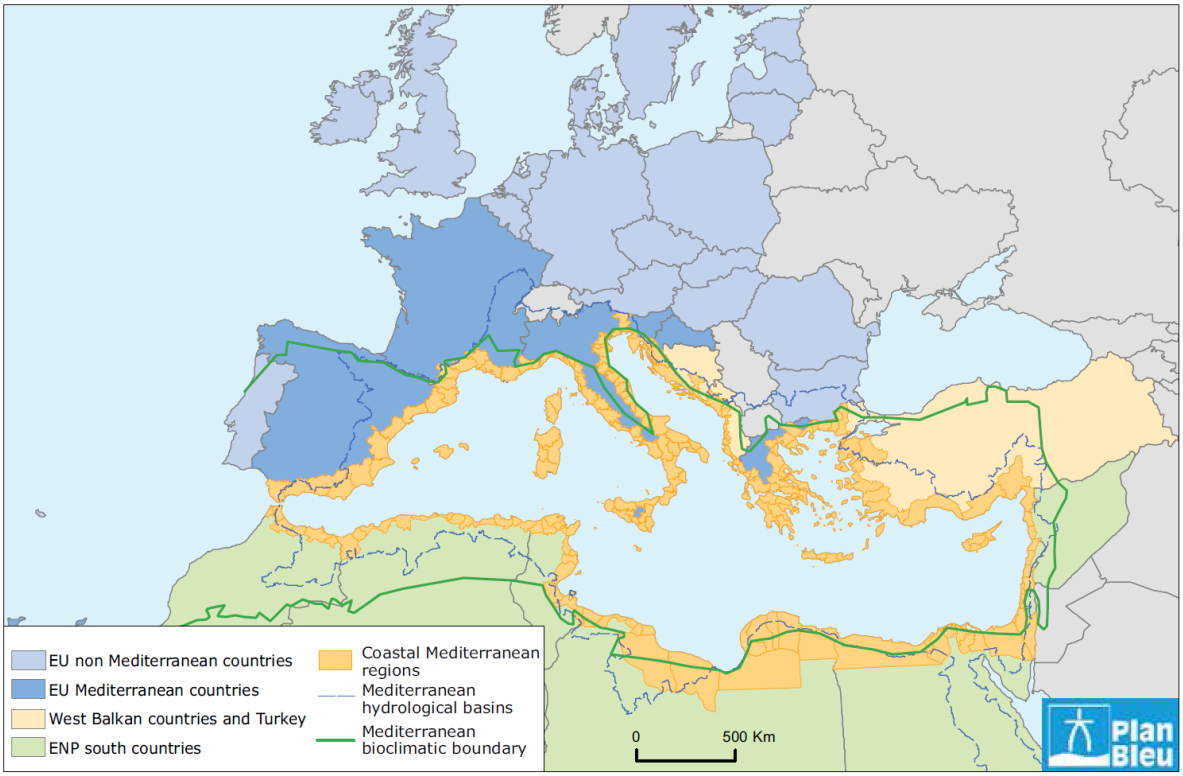
Draft version 06/10/2016

Mediterranean Strategy for Sustainable Development Follow-up

## Annex III – List of proposed core NAPs indicators under EO5

| EO | Proposed core NAPs indicators | NAPs Update Guideline Indicator /H2002 Ref. No | IMAP Indicator Ref. No | SDG Indicator Ref. No | Common priority measures |
|---|---|---|---|---|---|
| EO5 | 1. Share of population with access to an improved sanitation system (total, urban, rural) | WW01 | | 6.2.1 | Build/ extend sewage networks |
| | 2. Volume of wastewater collected, of which volume of wastewater treated(in population equivalent) | WW02 | | | |
| | 3. Wastewater treated (in population equivalent) | WW03 | | 6.3.1 | Build/ expand/ upgrade municipal wastewater treatment plants |
| | 4. Total loads of BOD5, Total nitrogen, Total phosphorus discharged to the Mediterranean Sea from urban wastewater treatment | WW05 | | | |
| | 5. Concentration of key nutrients in the water column | WW06 | 13 (5.1.1) | | |

## Annex IV – Coastal hydrological basins draining into the Mediterranean Sea



## Annex V – Criteria and Standards for Microbial Water Quality (Decision IG.20/9)

Microbial Water Quality Assessment Category
(based on Intestinal enterococci (cfu/100 mL)

| **Category** | **A** | **B** | **C** | ***D*** |
|---|---|---|---|---|
| Limit values | <100* | 101-200* | 185** | >185**(1) |
| Water quality | Excellent quality | Good quality | Sufficient | Poor quality/ Immediate Action |

Minimum sampling frequency: at least one per month and not less than four in a bathing period including an initial one prior to the start of the bathing period.

* 95th percentile intestinal enterococci/100 mL (applying the formula 95th Percentile = antilog (μ + 1,65 σ)

** 90th percentile intestinal enterococci/100 mL (90th Percentile=antilog (μ + 1,282 σ), μ=calculated arithmetic mean of the log10 values; σ= calculated standard deviation of the log10 values.

(1) For single sample appropriate action is recommended to be carried out once the count for IE exceeds 500 cfu/100 mL

- For classification purposes at least 12 sample results are needed spread over 3-4 bathing seasons
- Reference method of analysis: ISO 7899-2 based on membrane filtration technique or any other approved technique
- Transitional period 4 years (starting by 1st January 2012)