WATER DATA DICTIONARIES (DRAFT)

Author: Seifeddine Jomaa, Joana Veiga

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ETC/ICM Deliverable
D2.3 *Support development of data dictionaries, QA/QC procedures and guidelines for water related data flows*

Support for the further implementation of the Shared Environmental Information System principles and practices in the ENP South region – SEIS South Support Mechanism (ENI SEIS II South)

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Prepared by: Seifeddine Jomaa, Joana Veiga
Revised by: Anita Künitzer
Organisation: ETC/ICM (UFZ, Deltares)

EEA project manager: Cecile Roddier-Quefelec

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Version History

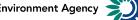| Version	Date	Author	Status and description	Distribution
1.0	22.05.2018	EEA/ETC (UFZ)	Data dictionary updated from SEIS Phase I, with inclusion of new indicators 3.2, 4.2, 4.3 and 5.2	EEA, EEA/ETC, Info-RAC and UNEP-MAP
2.0	31.05.2018	EEA/ETC (UFZ)	Includes comments from experts Anita Künitzer and Petra Ronen	EEA, EEA/ETC, Info-RAC and UNEP-MAP
3.0	10.07.2018	EEA/ETC (UFZ, Deltares)	Includes adjustments following Info-RAC Workshop (June 2018, Copenhagen) to ensure consistency with European and UNEP-MAP reporting and additional comments from UNEP-MAP	EEA, EEA/ETC and UNEP-MAP
4.0	12.09.2018	EEA/ETC (UFZ, Deltares)	Includes adjustments following Info-RAC revision and comments from UNEP-MAP on the Bathing Water Quality (5.2)	EEA, EEA/ETC, UNEP-MAP and Info-RAC

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About this document

This document introduces the basis for the data dictionaries for the H2020 Water Indicators (IND 3, 4 and 5). The data dictionaries were developed based on the former phase of the ENPI–SEIS project and in close consultation with UNEP-MAP, EEA and Info-RAC. This basis has been prepared considering the data needed for the Water indicators calculation and their specification sheets. The QA/QC procedures were considered, also, to ensure reliable and consistent data flows per country and per year.

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Data Description Document

Version 4.0
Date: 12.09.2018

1. Introduction

This document provides a description of the data sets required for calculating the selected Horizon 2020 Water indicators (see Annex 1), thereby referred to as "Data Description Document". It will feed into the Data Dictionary of the Info-MAP system - a central service for storing technical specifications for information requested in reporting, with the purpose of supporting countries in reporting good quality data.

2. Overview of H2020 Water Indicators

Indicator group	Indicator group short name	Indicators
IND3	Access to sanitation	3.1 Share of total, urban and rural population with access to an Improved Sanitation System (ISS) 3.2 Proportion of population using Safely Managed Sanitation Services (SMSS)
IND4	Municipal Wastewater Management	4.1 Municipal wastewater collected and wastewater treated 4.2 Direct use of treated municipal wastewater 4.3 Release of nutrients from municipal wastewater
IND5	Coastal and Marine Water Quality	5.1 Nutrient concentrations in transitional, coastal and marine waters 5.2 Bathing water quality

3. Description of Indicators

IND3. Dataset: Access to sanitation

Dataset definition

Policy theme	Access to sanitation
Short name	Improved Sanitation
Indicators	3.1 and 3.2
Key words	Improved Sanitation System (ISS) and Safely Managed Sanitation Services (SMSS)
Spatial coverage	National and catchment/ hydrological basin at the coastal area
Dataset relevance	This dataset is relevant for populating H2020 Water Indicators 3.1 and 3.2 (see Annex 1) and for reporting to SDG Indicator 6.2.1
Parameters	Total population, Urban population, Rural population, Total population with access to an ISS, Urban population with access to an ISS, Rural population with access to an ISS.
Methodology for obtaining data	Delivered by country
Planned update frequency	Every 1 year

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Overview of data tables

Data table	Name	Definition	Short description
3.1.	**Share of total, urban and rural population with access to an improved (ISS) sanitation system**	Percentage of the population (%) having access to improved sanitation systems. "Share of population with access to improved sanitation" refers to the percentage of the population with access to facilities which hygienically separate human excreta from human, animal and insect contact.	This indicator was developed by the Joint Monitoring Programme for Water Supply and Sanitation of the United Nations Children's Fund and the World Health Organization (WHO) to help monitor progress towards one of the Millennium Development Goals.
3.2.	**Proportion of population using safely managed sanitation services (SMSS).**	Percentage of population (%) with access to safely managed sanitation systems, which are defined as an improved sanitation facility that is both: a) Not shared with other households, b) and where excreta is safely disposed of in situ or treated off site.	This indicator is based on the new definition of the Sustainable Development Goal (SDG) Indicator 6.2.1, which builds upon the MDG Indicator above. It addresses public health beyond the household level, including containment and treatment of the faecal waste, which is not included in the MDG definition.

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Data table 1: Share of national population with access to an improved sanitation system (ISS)

	Column name	Column definition	Methodology	Data specifications	Equivalent in WISE if exist
1.	Country_Code	Country codes as defined in the codelist.	ISO 3166-alpha-2, Codes elements as defined in codelist: i	Type of element: common Datatype: integer Min. size: 3 Max. size: 3	
2.	Year_H2020	Year for which data is available	Use the format YYYY	Type of element: common Datatype: date Min. size: 4 Max. size: 4 Min. value: 2003 Max. value: Current year	
3.	Total_Population	Total population	See Table D		
4.	Urban_Population	Urban population	See Table D		
5.	Rural_Population	Rural population	See Table D		
6.	Total_Population_ISS	Total national population with access to Improved Sanitation Systems (ISS)	Total population with access to improved sanitation system refers to the population with access to facilities which hygienically separate human excreta from human, animal and insect contact.	Type of element: non-common Datatype: integer Unit: inhabitants Min. size: 1 Max. size: 10 Min. value: 1 Max. value: 1000 000 000	
7.	Urban_Population_ISS	National population living in urban areas with access to Improved Sanitation Systems (ISS)	Urban population with access to improved sanitation system refers to the population with access to facilities which hygienically separate human excreta from human, animal and insect contact.	Type of element: non-common Datatype: integer Unit: inhabitants Min. size: 1 Max. size: 10 Min. value: 1 Max. value: 1000 000 000	
8.	Rural_Population_ISS	National population living in rural areas with access to Improved Sanitation Systems (ISS)	Rural population with access to improved sanitation refers to the population with access to facilities which hygienically separate human excreta from human, animal and insect contact.	Type of element: non-common Datatype: integer Unit: inhabitants Min. size: 1 Max. size: 10 Min. value: 1 Max. value: 1000 000 000	
9.	Data_Collection_Method	Method of data collection.	Codes elements as defined in codelist vi.	Type of element: common Datatype: integer Size: 3	

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| 10. | Remarks | Remarks, comments or explanatory notes (free text). | | Type of element: common
Datatype: string
Min. size: 0
Max. size: 4096 | |

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Data table 2: Share of population in the catchment/hydrological basin at the coastal area with access to an improved sanitation system (ISS)

	Column Name	Column definition	Methodology	Data specifications	Equivalent in WISE if exist
1.	Country_Code	Country codes as defined in the codelist	ISO 3166-alpha-2, Codes elements as defined in codelist: i	Type of element: common Datatype: integer Size: 3	
2.	Hydrological_Basin	Name of catchment/ hydrological basin at the coastal area	Name of catchment/ hydrological basin at the coastal area according to codelist: iii	Type of element: common Datatype: integer Max. Size: 3	
3.	Year_H2020	Year for which data is available	Use format YYYY	Type of element: common Datatype: date Min. size: 4 Max. size: 4 Min. value: 2003 Max. value: Current year	
4	Total_Pop_Coast_Hydro_Basin	Total population living in the coastal area and in the hydrological basins (catchment) of coastal areas	See Table D		
5	Urban_Pop. Coast_Hydro_Basin	Urban population living in the coastal area and in the hydrological basins (catchment) of coastal areas	See Table D		
6	Rural_Pop_Coast_Hydro_Basin	Rural population living in the coastal area and in the hydrological basins (catchment) of coastal areas	See Table D		
7.	Total_Pop_Coast_ISS	Population in coastal areas and catchment/ hydrological basin at the coastal area with access to Improved Sanitation Systems (ISS).	Total population with access to improved sanitation system refers to the population with access to facilities which hygienically separate human excreta from human, animal and insect contact.	Type of element: non-common Datatype: integer Unit: inhabitants Min. size: 1 Max. size: 10 Min. value: 1 Max. value: 1000 000 000	
8.	Urban_Pop_Coast_ISS	Population living in urban	Urban population with access to	Type of element: non-common	

		coastal areas and hydrological basin at coastal areas with access to Improved Sanitation Systems (ISS).	improved sanitation system refers to the population with access to facilities which hygienically separate human excreta from human, animal and insect contact.	Datatype: integer Unit: inhabitants Min. size: 1 Max. size: 10 Min. value: 1 Max. value: 1000 000 000	
9.	Rural_Pop_Coast_ISS	Population living in rural coastal areas and hydrological basin at coastal areas with access to Improved Sanitation Systems (ISS).	Rural population with access to improved sanitation system refers to the population with access to facilities which hygienically separate human excreta from human, animal and insect contact.	Type of element: non-common Datatype: integer Unit: inhabitants Min. size: 1 Max. size: 10 Min. value: 1 Max. value: 1000 000 000	
10.	Data_Collection_Method	Method of data collection.	Codes elements as defined in codelist vi.	Type of element: common Datatype: integer Max. Size: 3	
11.	Remarks	Remarks, comments or explanatory notes (free text)		Type of element: common Datatype: string Min. size: 0 Max. size: 4096	

Data table 3: Proportion of national population using safely managed sanitation services (SMSS).

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	Column name	Column definition	Methodology	Data specifications	Equivalent in WISE if exist
1.	Country_Code	Country codes as defined in the codelist.	ISO 3166-alpha-2, Codes elements as defined in codelist: i	Type of element: common Datatype: integer Size: 3	
2.	Year_H2020	Year for which data is available	Use format YYYY	Type of element: common Datatype: date Min. size: 4 Max. size: 4 Min. value: 2003 Max. value: Current year	
3.	Total_Population	Total population	See Table D		
4.	Urban_Population	Urban population	See Table D		
5.	Rural_Population	Rural population	See Table D		
6.	Total_Population_SMSS	Total national population with access to Safely Managed Sanitation Systems (SMSS)	"Safely managed sanitation services" is defined as an improved sanitation facility considering: c) that is not shared with other households, d) and where excreta is safely disposed of in situ or treated off site.	Type of element: non-common Datatype: integer Unit: inhabitants Min. size: 1 Max. size: 10 Min. value: 1 Max. value: 1000 000 000	
7.	Urban_Population_SMSS	National population living in urban areas with access to Safely Managed Sanitation Systems (SMSS)	"Safely managed sanitation services" is defined as an improved sanitation facility considering: a) that is not shared with other households, b) and where excreta is safely disposed of in situ or treated off site.	Type of element: non-common Datatype: integer Unit: inhabitants Min. size: 1 Max. size: 10 Min. value: 1 Max. value: 1000 000 000	
8.	Rural_Population_SMSS	National population living in rural areas with access to safely managed sanitation systems (SMSS)	"Safely managed sanitation services" is defined as an improved sanitation facility considering: a) that is not shared with other households, b) and where excreta is safely disposed of in situ or treated off site.	Type of element: non-common Datatype: integer Unit: inhabitants Min. size: 1 Max. size: 10 Min. value: 1 Max. value: 1000 000 000	

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9.	Data_Collection_ Method	Method of data collection.	Codes elements as defined in codelist vi.	Type of element: common Datatype: integer Max. size: 3
10.	Remarks	Remarks, comments or explanatory notes (free text)		Type of element: common Datatype: string Min. size: 0 Max. size: 4096

Data table 4: Proportion of population in the catchment/ hydrological basin at the coastal area using safely managed sanitation services (SMSS)

	Column Name	Column definition	Methodology	Data specifications	Equivalent in WISE if exist
1.	Country_Code	Country codes as defined in the codelist.	ISO 3166-alpha-2, Codes elements as defined in codelist: i	Type of element: common Datatype: integer Max. size: 3	
2.	Hydrological_Basin	Name of catchment/ hydrological basin at the coastal area	Name of catchment/ hydrological basin at the coastal area according to codelist: iii	Type of element: common Datatype: integer Max. size: 3	
3.	Year_H2020	Year for which data is available	Use format YYYY	Type of element: common Datatype: date Min. size: 4 Max. size: 4 Min. value: 2003 Max. value: Current year	
4.	Total_Pop_Coast_Hydro_Basin	Total population living in the coastal area and in the hydrological basins (catchment) of coastal areas	See Table D		
5.	Urban_Pop. Coast_Hydro_Basin	Urban population living in the coastal area and in the hydrological basins (catchment) of coastal areas	See Table D		
6.	Rural_Pop_Coast_Hydro_Basin	Rural population living in the coastal area and in	See Table D		

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		the hydrological basins (catchment) of coastal areas			
7.	Total_Pop_Coast_SMSS	Population in coastal areas and catchment/ hydrological basin at the coastal area with access to Safely Managed Sanitation Systems (SMSS)	The total population as of the reference year (Year_H2020) Data are collected at catchment/ hydrological basin at the coastal area or, if data not available, major coastal cities, in order to quantify the extent of land-based pressures that could potentially have a downstream effect on the state/impact of the sea.	Type of element: non-common Datatype: integer Unit: inhabitants Min. size: 1 Max. size: 10 Min. value: 1 Max. value: 1000 000 000	
8.	Urban_Pop_Coast_SMSS	Population living in urban coastal areas and hydrological basin at coastal areas with access Safely Managed Sanitation Systems (SMSS)	The urban population as of the reference year (Year_H2020) Data are collected at catchment/ hydrological basin at the coastal area or, if data not available, major coastal cities, in order to quantify the extent of land-based pressures that could potentially have a downstream effect on the state/impact of the sea.	Type of element: non-common Datatype: integer Unit: inhabitants Min. size: 1 Max. size: 10 Min. value: 1 Max. value: 1000 000 000	
9.	Rural_Pop_Coast_ SMSS	Population living in rural coastal areas and hydrological basin at coastal areas with access to Safely Managed Sanitation Systems (SMSS)	The rural population as of the reference year (Year_H2020) Data are collected at catchment/ hydrological basin at the coastal area or, if data not available, major coastal cities, in order to quantify the extent of land-based pressures that could potentially have a downstream effect on the state/impact of the sea.	Type of element: non-common Datatype: integer Unit: 1000 inhabitants Min. size: 1 Max. size: 10 Min. value: 1 Max. value: 1000 000 000	
10.	Data_Collection_Method	Method of data collection	Codes elements as defined in codelist vi.	Type of element: common Datatype: integer Size: 3	
11.	Remarks	Remarks, comments or explanatory notes (free text)		Type of element: common Datatype: string Min. size: 0 Max. size: 4096	

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IND4. Dataset: Municipal Wastewater Management

Dataset definition

Policy theme	Municipal wastewater management
Short name	Municipal wastewater collected, treated and used
Indicators	4.1, 4.2 and 4.3
Key words	Wastewater, collection, treatment, management, use
Spatial coverage	National and catchment/ hydrological basin at the coastal area
Dataset relevance	This dataset is relevant for populating H2020 Water indicators 4.1, 4.2 and 4.3 – see Annex 1. Indicator 4.1 is also relevant for SDG 6.3.1. Indicator 4.2 can be linked to SDG Target 6.3. Indicator 4.3 is relevant to monitor the implementation of the Regional Plan on reduction of BOD_5 and both 4.1 and 4.3 can be linked to Ecological Objective 5 – Eutrophication.
Parameters	Volume of municipal wastewater collected, volume of municipal wastewater treated, volume of wastewater subject to which treatment level (primary, secondary and tertiary), total volume of direct reuse of municipal wastewater, volume of direct reuse of municipal wastewater per type of activity, volume of direct reuse of municipal wastewater per level of treatment.
Methodology for obtaining data	Delivered by country
Planned update frequency	Every 1 year

Overview of data tables

Data table	Name	Definition	Short description
4.1.	**Municipal wastewater collected and wastewater treated** *Additional information that supplements this Indicator* • Percentage of the treated wastewater according to the type of treatment (primary, secondary, tertiary). • Total annual design capacity of functional facilities. • Total number of functional municipal wastewater treatment facilities.	Volume of collected and treated municipal wastewater per year per country, including type of treatment, at the national and catchment/ hydrological basin at the coastal area. Wastewater treatment is defined as the process of removing contaminants from wastewater according to the established national standards on effluent quality, to allow for its discharge to the environment without adverse impact on public health and the ecosystem.	This indicator provides information on the collection and treatment level of wastewater in the region and can be considered as a "response" indicator. It helps identifying communities where wastewater treatment action is required, while helping to assess where progress has been made.

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4.2.	Direct use of treated municipal wastewater	Volume of treated and used municipal wastewater per year and per country at the national level, including type of treatment. Volume of direct treated wastewater intended for reuse, with no or little prior dilution with freshwater during most of the year. "Direct use" refers to the introduction of treated wastewater via pipelines and other necessary infrastructure directly from a water treatment plant to a distribution system. An example would be the distribution of treated wastewater to be used directly in agricultural irrigation.	Wastewater use is a widespread practice in the Mediterranean and is an important non-conventional source of water in a context of water scarcity and increased water demands. However, the management and standards of wastewater use vary greatly across countries and in many cases raw or insufficiently treated wastewater can pose health hazards and environmental risks. This indicator encompasses the use of water which is generated from municipal wastewater or any other urban marginal water and treated to a standard that is appropriate for its intended use.
4.3.	Release of nutrients from municipal effluents	Release of key nutrients (BOD, N and P) from municipal wastewater originating from urban agglomerations of more than 2000 inhabitants.[1]	This indicator is a "pressure" indicator, providing insight into the quality of discharged municipal effluents and the degree to which nutrients from urban wastewater may contribute to the increased concentration of nutrients in certain areas of the Mediterranean Sea.

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[1] As per requirements of regional plan on the reduction of BOD from urban wastewater in the framework of the implementation of Article 15 of the LBS Protocol

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Data table 1: Municipal wastewater collected and wastewater treated at the national level

	Column Name	Column definition	Methodology	Data specifications	Equivalent in WISE if exist
1.	Country_Code	Country codes as defined in the codelist.	ISO 3166-alpha-2, Codes elements as defined in codelist: i	Type of element: common Datatype: Integer Max. size: 3	
2.	Year_H2020	Year for which data is available	Use format YYYY	Type of element: common Datatype: date Min. size: 4 Max. size: 4 Min. value: 2003 Max. value: Current year	
3.	Volume_Collected_MWW	Volume of municipal wastewater collected by public sewage networks and from storage tanks per year	Volume in million m^3 (Mm^3) of municipal wastewater collected, which is estimated based on the volume of wastewater entering the WWTPs, per year	Type of element: non-common Datatype: float Unit: Mm^3/yr Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	uwwWasteWater Treated *The value should be reported for an UWWTP that has a design capacity more than 100 000 p.e. (link to E-PRTR facility).*
4.	Volume_Treated_MWW	Volume of municipal wastewater treated in wastewater treatment plants per year	Volume in million m^3 of municipal wastewater treated, which is estimated on wastewater leaving the WWTPs per year	Type of element: non-common Datatype: float Unit: Mm^3/yr Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	
5.	Fraction_Primary_Treatment	Fraction of municipal wastewater subject to primary treatment per year. "Primary treatment" refers to physical and/or chemical process	Percentage of municipal wastewater discharged after primary treatment expressed as a fraction of volume [%] of treated municipal wastewater per year	Type of element: non-common Datatype: decimal Decimal precision: 2 Unit: % v/v Min. Size:3 Max. size: 5 Min. value: 0 Max. value: 100	uwwPrimaryTrea tment

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		involving settlement of suspended solids, or other processes in which the BOD5 of the incoming waste water is reduced by at least 20% before discharge and the total suspended solids of the incoming waste water are reduced by at least 50%.			
6.	Fraction_Secondary_Treatment	Fraction of municipal wastewater subject to secondary treatment per year. "Secondary (biological) treatment" uses biological process to decompose most of the organic matter, resulting in the reduction of 70-90% of BOD5, and remove about 20 - 30% of the nutrients. Primary treatment alone does not remove ammonium, whereas the removal rate of ammonium by secondary (biological) treatment is around 75%.	Percentage of municipal wastewater discharged after secondary treatment expressed as a fraction of volume [%] of treated municipal wastewater per year	Type of element: non-common Datatype: decimal Decimal precision: 2 Unit: % v/v Min. Size:3 Max. size: 5 Min. value: 0 Max. value: 100	uwwSecondaryTreatment
7.	Fraction_Tertiary_Treatment	Fraction of municipal wastewater subject to tertiary treatment per year. "Tertiary (advanced or more stringent) treatment" further removes nutrients (nitrogen and/or phosphorus) and/or any other pollutant affecting	Percentage of municipal wastewater discharged after tertiary treatment expressed as a fraction of volume [%] of treated municipal wastewater per year The sum of % of MWW receiving primary, secondary and tertiary must equal 100%.	Type of element: non-common Datatype: decimal Decimal precision: 2 Unit: % v/v Min. Size:3 Max. size: 5 Min. value: 0 Max. value: 100	

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		the quality or a specific use of water: microbiological pollution, colour, etc.			
8.	Design_Capacity1	Total annual design capacity of functional facilities (Million m^3/year)	Volume in million m^3 per year	Type of element: non-common Datatype: float Unit: Mm^3/yr Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	
9.	Design_Capacity2	Total annual design capacity of functional facilities in p.e. (if volume not available)	Population Equivalent (p.e.)	Type of element: non-common Unit: p. e. Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	rcaPlantsCapacity54
10.	Number_MWWTPs	Total number of functional Municipal Wastewater Treatment Plants	Number	Type of element: common Datatype: integer Min. size: 1 Max. size: 6 Min. value: 0 Max. value: 100 000	rcaPlants54
11.	Data_Collection_Method	Method of data collection.	Codes elements as defined in codelist vi.	Type of element: common Datatype: integer Size: 3	
12.	Remarks	Remarks, comments or explanatory notes (free text).		Type of element: common Datatype: string Min. size: 0 Max. size: 4096	

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Data table 2: Municipal wastewater collected and wastewater treated per catchment/ hydrological basin at the coastal area

	Column Name	Column definition	Methodology	Data specifications	Equivalent in WISE if exist
1.	Country_Code	Country codes as defined in the codelist.	ISO 3166-alpha-2, Codes elements as defined in codelist: i	Type of element: common Datatype: Integer Size: 3	
2.	Hydrological_Basin	Name of catchment/ hydrological basin at the coastal area	Name of catchment/ hydrological basin at the coastal area according to codelist: iii	Type of element: common Datatype: Integer Size: 3	
3.	Year_H2020	Year for which data is available	Use format YYYY	Type of element: common Datatype: date Min. size: 4 Max. size: 4 Min. value: 2003 Max. value: Current year	
4.	Volume_MWW_Collected_Hydro_Coast	Volume of municipal wastewater collected by public sewage networks and from storage tanks in both the coastal hydrological basin and in the costal agglomerations	Volume in million m^3 of municipal wastewater collected per year	Type of element: non-common Datatype: float Unit: Mm^3/yr Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	
5.	Volume_MWW_Collected_Coast	Volume of municipal wastewater collected by public sewage networks and from storage tanks in costal agglomerations	Volume in million m^3 of municipal wastewater collected per year	Type of element: non-common Datatype: float Unit: Mm^3/yr Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	
6.	Volume_Treated_MWW_Hydro_Coast	Volume of of wastewater treated in wastewater treatment plants treated in both the coastal hydrological basin and in costal agglomerations	Volume in million m^3 of municipal wastewater treated per year	Type of element: non-common Datatype: float Unit: Mm^3/yr Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	
7.	Volume_Treated_MWW_Coast	Volume of of wastewater treated in wastewater	Volume in million m^3 of municipal wastewater treated per year	Type of element: non-common Datatype: float	

		treatment plants treated in the costal agglomerations		Unit: Mm³/yr Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	
8.	Fraction_Primary_Treatment	Fraction of municipal wastewater subject to primary treatment per year. "Primary treatment" refers to physical and/or chemical process involving settlement of suspended solids, or other processes in which the BOD5 of the incoming waste water is reduced by at least 20% before discharge and the total suspended solids of the incoming waste water are reduced by at least 50%.	Fraction of municipal wastewater discharge after primary treatment expressed as a fraction of volume [%] of treated municipal wastewater per year The sum of % of treated MWW receiving primary, secondary and tertiary must equal 100%.	Type of element: non-common Datatype: decimal Decimal precision: 2 Unit: % v/v Min. size: 3 Max. size: 5 Min. value: 0 Max. value: 100	aggPercPrimTreatment But it is generated based on p.e. and not measured
9.	Fraction_Secondary_Treatment	Fraction of municipal wastewater subject to secondary treatment per year. "Secondary (biological) treatment" uses biological process to decompose most of the organic matter, resulting in the reduction of 70-90% of BOD5, and remove about 20 - 30% of the nutrients. Primary treatment alone does not remove ammonium, whereas the removal rate of ammonium by secondary (biological) treatment is	Fraction of municipal wastewater discharged after secondary treatment expressed as a fraction of volume [%] of treated municipal wastewater per year The sum of % of treated MWW receiving primary, secondary and tertiary must equal 100%.	Type of element: non-common Datatype: decimal Decimal precision: 2 Unit: % v/v Min. size: 3 Max. size: 5 Min. value: 0 Max. value: 100	

		around 75%.			
10.	Volume_Tertiary_Treatment	Volume of municipal wastewater subject to tertiary treatment per year. "Tertiary (advanced or more stringent) treatment" further removes nutrients (nitrogen and/or phosphorus) and/or any other pollutant affecting the quality or a specific use of water: microbiological pollution, colour, etc.	Volume of municipal wastewater discharged after tertiary treatment expressed as a fraction of volume [%] of treated municipal wastewater per year The sum of % of treated MWW receiving primary, secondary and tertiary must equal 100%.	Type of element: non-common Datatype: decimal Decimal precision: 2 Unit: % v/v Min. size: 3 Max. size: 5 Min. value: 0 Max. value: 100	
11.	Design_Capacity_Coast1	Total annual design capacity of functional facilities in the coastal areas (Million m^3/year)	Volume in million m^3 per year	Type of element: non-common Datatype: float Unit: Mm^3/yr Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	rcaPlantsCapacity54
	Design_Capacity_Coast2	Total annual design capacity of functional facilities in P.E in the coastal (if volume not available)	Population Equivalent (p.e.)	Type of element: non-common Unit: p. e. Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	
12.	Number_Coast_MWWTPs	Total number of functional Municipal Wastewater Treatment Plants that discharge directly in the Mediterranean Sea or in hydrological basins that flow into the Mediterranean.	Number	Type of element: common Datatype: integer Min. size: 1 Max. size: 6 Min. value: 0 Max. value: 100 000	
13.	Data_Collection_Method	Method of data collection.	Codes elements as defined in codelist vi.	Type of element: common Datatype: integer Size: 3	
14.	Remarks	Remarks, comments or		Type of element: common	

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				Datatype: string Min. size: 0 Max. size: 4096	

Data table 3: Direct use of treated municipal wastewater at the National level

	Column Name	Column definition	Methodology	Data specifications	Equivalent in WISE if exist
1.	Country Code	Country codes as defined in the codelist.	ISO 3166-alpha-2, Codes elements as defined in codelist: i	Type of element: common Datatype: integer Size: 3	
2.	Year_H2020	Year for which data is available	Use format YYYY	Type of element: common Datatype: date Min. size: 4 Max. size: 4 Min. value: 2003 Max. value: Current year	
3.	Total_Volume_Direct_Reuse	Total volume of direct reuse of municipal wastewater	Real measurement of treated wastewater intended to be reused	Type of element: common Datatype: float Unit: Mm^3/yr Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	
4.	Fraction_Primary_Treatment_ Reuse	Fraction of used municipal wastewater subject to primary treatment per year. "Primary treatment" refers to physical and/or chemical process involving settlement of suspended solids, or other processes in which the BOD5 of the incoming waste water is reduced by at least 20% before discharge and the total suspended solids of the incoming waste water are reduced by at least	Fraction of used municipal wastewater after primary treatment expressed as a fraction of volume [%] of treated municipal wastewater per year	Type of element: non-common Datatype: decimal Decimal precision: 2 Unit: % v/v Min.size: 3 Max. size: 5 Min. value: 0 Max. value: 100	

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		50%.			
5.	Fraction_Secondary_Treatment_Reuse	Fraction of used municipal wastewater subject to secondary treatment per year. "Secondary (biological) treatment" uses biological process to decompose most of the organic matter, resulting in the reduction of 70-90% of BOD5, and remove about 20 - 30% of the nutrients. Primary treatment alone does not remove ammonium, whereas the removal rate of ammonium by secondary (biological) treatment is around 75%	Fraction of used municipal wastewater after secondary treatment expressed as a fraction of volume [%] of treated municipal wastewater per year	Type of element: non-common Datatype: decimal Decimal precision: 2 Unit: % v/v Min. size: 3 Max. size: 5 Min. value: 0 Max. value: 100	
6.	Fraction_Tertiary_Treatment_Reuse	Fraction of used municipal wastewater subject to tertiary treatment per year. "Tertiary (advanced or more stringent) treatment" further removes nutrients (nitrogen and/or phosphorus) and/or any other pollutant affecting the quality or a specific use of water: microbiological pollution, colour, etc.	Fraction of used municipal wastewater after tertiary treatment expressed as a fraction of volume [%] of treated municipal wastewater per year	Type of element: non-common Datatype: decimal Decimal precision: 2 Unit: % v/v Min. size: 3 Max. size: 5 Min. value: 0 Max. value: 100	
7.	Total_Volume_Direct_Reuse_Activity	Volume of direct reuse of municipal wastewater per type of activity	Codes elements as defined in codelist vii	Type of element: common Unit: Mm^3/yr Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	dcpIrrigation *This value should be reported if part or all the treated waste water is reused.*

					Report "R" in case of irrigation use of treated waste water outside the treatment plant site, "INF" in case reuse for groundwater recharge and other in case of other reuse outside the treatment plant site.
8.	Data_Collection_Method	Method of data collection.	Codes elements as defined in codelist vi	Type of element: common Datatype: integer Size: 3	
9.	Remarks	Remarks, comments or explanatory notes (free text).		Type of element: common Datatype: string Min. size: 0 Max. size: 4096	

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Data table 4: Release of nutrients from municipal effluents per catchment/ hydrological basin at the coastal area

	Column name	Column definition	Methodology	Data specifications	Equivalent in WISE if exist
1.	Country_Code	Country codes as defined in the codelist.	ISO 3166-alpha-2, Codes elements as defined in codelist: i	Type of element: common Datatype: Integer Size: 3	
2.	Hydrological_Basin	Name of catchment/ hydrological basin at the coastal area	Name of catchment/ hydrological basin at the coastal area	String codelist: iii Type of element: common Datatype: integer Max. size: 4	
3.	Year_H2020	Year for which data is available	Use format YYYY	Type of element: common Datatype: date Min. size: 4 Max. size: 4 Min. value: 2003 Max. value: Current year	
4.	Total_Pop_Coast_Hydro_Basin	Total population living in the coastal area and in the hydrological basins (catchment) of coastal areas	See Table D		
4.	Total_Population_≥2000 Inhabitants_Hydro_Coast	Total population in agglomerations ≥ 2000 inhabitants located within the hydrological basin of coastal areas and within coastal areas that discharge directly in the Mediterranean (in case total population in coastal areas and coastal	See Table D		

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		hydrological basins is not available)			
5.	Total_Population_≥2000 Inhabitants_Coast	Total population living in coastal agglomerations ≥ 2000 inhabitants	See Table D		
6.	Total_UWW_Generated_Hydro_Coast	Estimated urban wastewater generated annually in both the coastal hydrological basin and in the costal agglomerations in p. e.	Sum of generated urban wastewater (in population equivalent) in the hydrological basins (catchments) of coastal areas and in the coastal agglomerations directly discharging into the coastal areas	Type of element: common Unit: p. e. Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	
7.	Total_UWW_Generated_Coast	Estimated urban wastewater generated annually in the costal agglomerations in p. e.	Generated urban wastewater (in population equivalent) in the coastal agglomerations directly discharging into the coastal areas	Type of element: common Unit: p. e. Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	
8.	Total_Volume_Discharged_MWWTP_Hydro_Coast	Total volume of urban wastewater discharged annually by WWTPs in the hydrological basin (catchment) of coastal area and directly in the coastal areas	Total treated and discharged volume of urban wastewater from existing Municipal WWTPs in the hydrological basin (catchments) of coastal areas and in the costal agglomerations	Type of element: non-common Datatype: decimal Unit: Mm^3/yr Min. size: 1 Max. size: 10 Min. value: 1 Max. value: 1000 000 000	
9.	Total_Volume_Discharged_MWWTP_Coast	Total volume of urban wastewater discharged annually by WWTPs directly in the coastal areas	Total treated and discharged volume of urban wastewater from existing Municipal WWTPs in the costal agglomerations	Type of element: non-common Datatype: decimal Unit: Mm^3/yr Min. size: 1 Max. size: 10 Min. value: 1 Max. value: 1000 000 000	
10.	Estimated_BOD_Load_Treat	Estimated BOD load discharged annually from Municipal WWTPs	BOD loads from treated WWTP after primary, secondary and tertiary treatment	Type of element: common Datatype: decimal Unit: Ton/yr Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	uwwBODDischargeMeasured *The value (either measured, calculated or estimated) should be reported for an*

					UWWTP that has a design capacity more than 100 000 p.e. (link to E-PRTR facility).
11.	Estimated_TN_Load_Treat	Estimated Total Nitrogen load discharged annually from Municipal WWTPs	TN loads from treated WWTP after primary, secondary and tertiary treatment	Type of element: common Datatype: decimal Unit: Ton/yr Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	uwwNIncoming Measured
12	Estimated_TP_Load_Treat	Estimated Total Phosphorus load discharged annually from Municipal WWTPs	TP loads from treated WWTP after primary, secondary and tertiary treatment	Type of element: common Datatype: decimal Unit: Ton/yr Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	uwwPIncoming Measured
13	BOD_Load_MWW_Untreated_Hydro_Coast	Estimated BOD load discharged annually from untreated MWW	Estimated BOD loads for wastewater discharged without treatment in the hydrological basin (catchments) of coastal areas and in the costal agglomeration. **Person load** BOD, g/person/d (15-80); COD, g/person/d (25-200)	Type of element: common Datatype: decimal Unit: Ton/yr Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	
14	TN_Load_MWW_Untreated_Hydro_Coast	Estimated TN load discharged annually from untreated MWW	Estimated TN loads for wastewater discharged without treatment in the hydrological basin (catchments) of coastal areas and in the costal agglomeration. **Person load** Nitrogen g/person/d (2-15)	Type of element: common Datatype: decimal Unit: Ton/yr Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	rcaNDischarged54
15	TP_Load_MWW Untreated_Hydro_Coast	Estimated TP load discharged annually from MWW collected without treatment	Estimated TP loads for wastewater discharged without treatment in the hydrological basin (catchments) of coastal areas and in the costal agglomeration. **Person load**	Type of element: common Datatype: decimal Unit: Ton/yr Min. size: 1 Max. size: 10 Min. value: 0	rcaPDischarged54

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			Phosphorus, g/person/d (1-3)	Max. value: 1000 000 000	
16	Total_BOD_Load_Hydro_Coast	Total BOD load discharged annually from treated and untreated MWW	Total discharged BOD loads from treated and untreated wastewater originating in agglomerations (of size ≥2000) located in the hydrological basin of coastal areas and those directly discharging into the Mediterranean, as defined by the LBS Protocol	Type of element: common Datatype: decimal Unit: Ton/yr Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	
17	TN_Load_Hydro_Coast	Total Nitrogen load discharged annually from treated and untreated MWW	Total discharged Nitrogen loads from treated and untreated wastewater originating in agglomerations (of size ≥2000) located in the hydrological basin of coastal areas and those directly discharging into the Mediterranean, as defined by the LBS Protocol	Type of element: common Datatype: decimal Unit: Ton/yr Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	
18	TP_Load_Hydro_Coast	Total Phosphorus load discharged annually from treated and untreated MWW	Total discharged Phosphorus loads from treated and untreated wastewater originating in agglomerations (of size ≥2000) located in the hydrological basin of coastal areas and those directly discharging into the Mediterranean, as defined by the LBS Protocol	Type of element: common Datatype: decimal Unit: Ton/yr Min. size: 1 Max. size: 10 Min. value: 0 Max. value: 1000 000 000	
19	Data_Collection_Method	Method of data collection.	Codes elements as defined in codelist vi.	Type of element: common Datatype: integer Size: 3	
20	Remarks	Remarks, comments or explanatory notes (free text).		Type of element: common Datatype: string Min. size: 0 Max. size: 4096	

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IND5. Dataset: Coastal and Marine Water Quality

Dataset definition

Policy theme	Nutrient concentrations
Short name	Nutrients
Indicators	**5.1 and 5.2**
Key words	Nutrient concentrations, bathing water quality
Spatial coverage	***Transitional waters***, ***Coastal waters*** and ***Marine waters***
Dataset relevance	This dataset is relevant for populating H2020 Water Indicators– see Annex 1. These indicators are directly linked to the Ecological Objectives 5 – Eutrophication and 9 – Contaminants, as they correspond to IMAP's common indicators 13 and 21, respectively.
Parameters	Mean TN and TP summer and winter, Seasonal aggregated (Winter and Summer) TN and TP, Spatial aggregated TN and TP, Station, Depth, Mean Orthophosphate (o-PO_4) concentration, mean Nitrate (NO_3) concentration, mean Ammonium (NH_4) concentration, mean Nitrate (NO_3) concentration, Number of bathing water sites in the Mediterranean and on Intestinal Enterococci (IE) concentrations at the coastal monitoring sites.
Methodology for obtaining data	Delivered by country
Planned update frequency	Every 1 year

Overview of data tables

Data table	Name	Definition	Short description
5.1.	**Nutrient concentrations in transitional, coastal and marine waters**	**Main indicator:** The levels and trends in total nitrogen (TN) and total phosphorus (TP) concentration in the transitional, coastal and marine waters of the Mediterranean Sea. **Sub-indicator:** These sub indicators (NO3, NO2, NH4, o-PO4) refer to the levels and trends in: nitrate, nitrite, ammonia and ortho-phosphate concentration in transitional, coastal and marine waters of the Mediterranean Sea. ***Transitional waters*** are surface waters in the vicinity of river mouths which are partly saline in character as a result of their proximity to coastal waters but which are substantially influenced by fresh waters ***Coastal waters*** are surface waters at a distance of one nautical mile on the seaward side from the nearest point of the baseline from which the breadth of territorial waters is measured, extending where appropriate up to the outer limit of transitional waters.	The Mediterranean Sea is one of the most oligotrophic (poor in nutrients) oceanic systems. However, some coastal hotspots receive excessive loads of nutrients from sewage effluents, river fluxes, aquaculture farms, fertilizers, and industrial facilities, resulting into intense eutrophic phenomena. This indicator reflects the concentration of key nutrients in the water column and provides information relative to eutrophication. It is a «state» indicator and can relate more directly to land-based sources of nutrients, in particular when assessed in combination with indicators 4.2.

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		Marine waters are the part of the ocean that extends further to the coastal waters to the open seas	
5.2.	**Bathing water quality**	Percentage of intestinal enterococci concentration measurements in bathing water sites within established standards Limit values are (in CFU/100 mL)[2]: - <100 (excellent) - 101-200 (good) - 185 (sufficient) >185 (poor)	Tourism is an important component of socio-economic development in the Mediterranean region and therefore it is crucial to monitor the water quality of bathing sites to ensure the safety of public and visitors. Enterococci sp. has been demonstrated to be an appropriate indicator for faecal bacteria in brackish and marine waters and is known to be a good indicator for human pathogens in wastewater discharges.

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[2] Methods on how to determine this are in the Annex I and II of the EC directive on Bathing Water (2006) http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32006L0007 and the Criteria and Standards for Microbial Water Quality (Decision IG.20/9) in the frame of the implementation of Article 7 of the LBS Protocol from the Barcelona Convention

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Data table 1: Nutrient concentrations in transitional, coastal and marine waters (Station)

	Column Name	Column definition	Methodology	Data specifications	Equivalent in WISE if exist
1.	Country_Code	Country codes as defined in the codelist.	ISO 3166-alpha-2, Codes elements as defined in codelist: i	Type of element: common Datatype: Integer . Size: 3	
2.	National_Station_ID	Station code	Use the former sampling guidelines provided by UNEP-MAP	Type of element: non-common Datatype: string Min. size: 0 Max. size: 255	
3.	National_Station_Name	Name of the station	Use the former sampling guidelines provided by UNEP-MAP	Type of element: non-common Datatype: string Min. size: 0 Max. size: 255	
4.	Longitude	Longitude in the reference system WGS84 decimal degrees	This is a required, not null field. Use the common geodetic datum WGS84. The bathing water must be located within country border.	Type of element: non-common Datatype: decimal Unit: decimal degrees Datatype: decimal Minimum size:7 Maximum size: 9 Minimum value: -180 Maximum value: 180 Decimal precision: 6	
5.	Latitude	Latitude in the reference system WGS84 decimal degrees	This is a required, not null field. Use the common geodetic datum WGS84. The bathing water must be located within country border.	Type of element: non-common Datatype: decimal Unit: decimal degrees Minimum size:7 Maximum size: 8 Minimum value: -90 Maximum value: 90 Decimal precision: 6	
6.	Closest_Coast	Distance from the station to the Coast (km)	Measured distance between the station point and closest coast	Type of element: non-common Datatype: decimal Unit: km	

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				Min. value: 0 Max. value: 1000	
7.	Sea_Depth	Depth of the Sea bed (m)	Measured distance between the Sea depth and the station point location	Type of element: non-common Datatype: decimal Unit: m Min. value: 0 Max. value: 1000	
8.	Mixing	Mixing characteristics of the water column in the station point, enter one of the values in the list (FM = Fully mixed, PM = Partially mixed, VS = Vertically stratified)	Degree of mixing of water column	Type of element: common Datatype: string Min. size: 2 Max. size: 2	
9.	Area_Type	Type of monitored area, enter one of the values in the list (HS = Hot spot, PSA = Protected Sea Area, LTER = Long Term Ecological Research Network, O = Other)	Type of station point	Type of element: common Datatype: string Min. size: 1 Max. size: 4	
10.	Remarks	Remarks, comments or explanatory notes (free text).		Type of element: common Datatype: string Min. size: 0 Max. size: 4096	

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Data table 2: Nutrient concentrations in transitional, coastal and marine waters (Parameters)

	Column Name	Column definition	Methodology	Data specifications	Equivalent in WISE if exist
1.	Country_Code	Country codes as defined in the codelist.	ISO 3166-alpha-2, Codes elements as defined in codelist: i	Type of element: common Datatype: integer Max. size: 3	
2.	National_Station_ID	Station code	Use the former sampling guidelines provided by UNEP-MAP	Type of element: non-common Datatype: string Min. size: 0 Max. size: 255	
3.	Sampling_Time	Date and time of sampling	Use the format YYYY-MM-DD HH:MM	Type of element: common Datatype: date Min. size: 8 Max. size: 8 Min. value: 2003-01-01 Max. value: Current date	
4.	Sample_ID	Sample code in case multiple replicas are made with the same value of Year, Month, Day and Time	Use the former sampling guidelines provided by UNEP-MAP	Type of element: non-common Datatype: string Min. size: 0 Max. size: 255	
5.	Determinant_Nutrients	Name of the chemical-physical or nutrient parameter, enter one of the values in the codelist: v	Codelist v	Type of element: non-common Datatype: string Min. size: 0 Max. size: 10	
6.	Unit_Nutrients_Seawater	Unit of parameters according to codelist v	Codelist v	Type of element: common Datatype: string Min. size: 2 Max. size: 5	
7.	Concentration_Flag	Enter the value '<' if the concentration value is lower than the limit of quantification or the value '[' if the concentration value is lower than the limit of detection. In other	Concentration status	Type of element: common Datatype: string Min. size: 2 Max. size: 5	

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				Type of element	
		cases leave the field empty.			
8.	Concentration	Concentration value	Codelist v	Type of element: non-common Datatype: decimal Unit: depends on the parameter (codelist v) Min. value: 0 Max. value: 1000	
9.	Sample_Depth	Depth of Sample collection (m)	Measured distance between the Sea depth and the station point location	Type of element: non-common Datatype: decimal Unit: m Min. value: 0 Max. value: 1000	
10.	Data_Collection_Method	Method of data collection.	Codes elements as defined in codelist vi.	Type of element: common Datatype: integer Size: 3	
11.	Remarks	Remarks, comments or explanatory notes (free text).		Type of element: common Datatype: string Min. size: 0 Max. size: 4096	

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Data table 3: Bathing Water Quality

	Column Name	Column definition	Methodology	Data specifications	Equivalent in WISE if exist
1.	Country_Code	Country codes as defined in the codelist.	ISO 3166-alpha-2, Codes elements as defined in codelist: i	Type of element: common Datatype: integer Max. size: 3	
2.	Bathing_Water_Name	Name of bathing water.	Use the former sampling guidelines provided by UNEP-MAP	Datatype: string Minimum size: 1 Maximum size: 100	
3.	Short_Bathing_Water_Name	Short name of bathing water.	Must be ≤ 20 characters. If Bathing Water Name ≤ 20 characters it can be used for ShortBathingWaterName as well.	Datatype: string Minimum size: 1 Maximum size: 20	
4.	Bathing_Water_ID	Unique identification code of bathing water	This is a required, not null field. Must be unique according to each country guidance	Datatype: string Minimum size: 3 Maximum size: 24	
5.	Longitude	Longitude in the reference system WGS84 decimal degrees	This is a required, not null field. Use the common geodetic datum WGS84. The bathing water must be located within country border.	Datatype: decimal Maximum size: 9 Minimum value: -180 Maximum value: 180 Decimal precision: 4 Unit: decimal degrees	*Same coordinate system used in WISE*
6.	Latitude	Latitude in the reference system WGS84 decimal degrees	This is a required, not null field. Use the common geodetic datum WGS84. The bathing water must be located within country border.	Datatype: decimal Maximum size: 8 Minimum value: -90 Maximum value: 90 Decimal precision: 4 Unit: decimal degrees	*Same coordinate system used in WISE*
7.	Start_Date	Start date of the bathing season	This is a required, not null field. Format: YYYY-MM-DD (year-month - day); YYYY must be the same as attribute of Bathing_Sampling_Year (YYYY) Must be < End_Date	Datatype: date	
8.	End_Date	End date of the bathing season	This is a required, not null field. Format: YYYY-MM-DD (year-month - day); YYYY must be the same as attribute of Bathing_Sampling_Year (YYYY)	Datatype: date	

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			Must be > Start_Date		
9.	Bathing_Sampling_Time	Date and time of sampling	This is a required, not null field. Format: YYYY-MM-DD (year-month - day).	Datatype: date	
10.	Bathing_Classification_UNEP-MAP_Criteria_Standards	Classification of the bathing site according to the criteria and standards agreed for the Mediterranean[3]	% of samples < 100 CFU : Excellent water 101 – 200 CFU[4]: Good 185[5] CFU: Sufficient > 185[6]: Poor	Datatype: string Minimum size: 4 Maximum size: 100	Class
11.	Other_Bathing_Classification_Used	Classification of the bathing site when it differs from UNEP-MAP classification	Provide the used Criteria and Standards (please provide the reference document)	Datatype: string Minimum size: 4 Maximum size: 100	
12.	Concentration_IE	Measured concentration of intestinal enterococci per sample in "colony forming unit" per 100 ml (cfu/100ml).	This is a required, not null field. Minimum value is minimal detection limit. Zero value is replaced by minimal detection limit. Upper detection limit: 35000 with 2 dilutions for all methods.	Datatype: decimal Maximum size: 10 Maximum value: 35000 Unit: cfu / 100 ml	ConcIE *Same parameter, unit and protocol are used in WISE under the Directive 2006/7/EC*
13.	Concentration_EC	Measured concentration of *Escherichia coli* per sample in "colony forming unit" per 100 ml (cfu/100ml).	This is a required, not null field. Minimum value is minimal detection limit. Zero value is replaced by minimal detection limit. Upper detection limit: 35.000 with 2 dilutions for all methods.	Datatype: decimal Maximum size: 10 Maximum value: 35000 Unit: cfu / 100 ml	ConcEC *Same parameter, unit and protocol are used in WISE under the Directive 2006/7/EC*
14.	Remarks	Remarks, comments or explanatory notes (free		Datatype: string Type of element: common	

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[3] UNEP/MED, 2012. Decision IG.20/9 - Criteria and Standards for bathing waters quality in the framework of the implementation of Article 7 of the LBS Protocol. https://wedocs.unep.org/rest/bitstreams/8498/retrieve

[4] 95th percentile intestinal enterococci/100 mL (applying the formula 95th Percentile = antilog (μ + 1,65 σ)

[5] 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

[6] 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

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		text).		Min. size: 0 Max. size: 4096	

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Annex 1: Codelists

i.   List of country codes

Type: Fixed

Value	Definition
DZ	Algeria
EG	Egypt
IL	Israel
JO	Jordan
LB	Lebanon
LY	Libya
MA	Morocco
PS	Palestine
TN	Tunisia

ISO 3166-1-alpha-2 code
http://www.iso.org/iso/home/standards/country_codes/country_names_and_code_elements.htm

ii.   Coastal cities and coastal regions per country codelist

Type: Suggested

Coastal city	Coastal Administrative region	Coastal Administrative region code	Country code
			DZ
			EG
			IL
			JO
			LB
			LY
			MA
			PS
			TN

iii.   Hydrological basins per country codelist

Type: Suggested

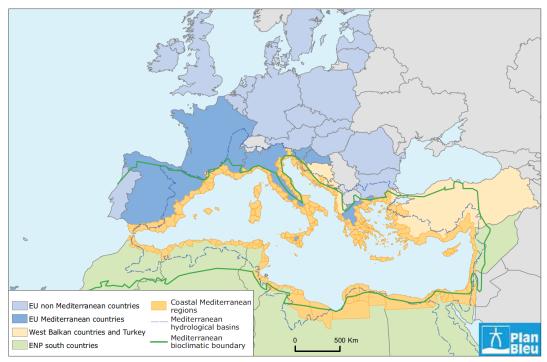| Catchment/ hydrological basin at the coastal area	Country code
	DZ
	EG
	IL
	JO
	LB
	LY
	MA
	PS
	TN

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Figure 1. Coastal hydrological basins draining into the Mediterranean Sea

iv.   Unit of measurement codelist and abbreviations

Type: Suggested

Value	Definition
Mm^3/yr	Volume in million m^3 per year of collected municipal wastewater
Mm^3/yr	Volume in million m^3 per year of municipal wastewater treated
% v/v	volume of municipal wastewater treated by primary, secondary or tertiary treatment divided by treated municipal wastewater
p. e.	Population Equivalent
MWW	Municipal Waste Water
cfu	Colony-forming Unit

v. List_parameters_Chemical-Physics

Value	Description
Temperature (water)	Water temperature expressed in degree Celsius (Cel)
Salinity	Practical Salinity Unit (psu)
Electrical conductivity	Electrical conductivity in Siemens per meter (S/m)
Dissolved oxygen	Dissolved oxygen (µmol O2/l)
Oxygen saturation	Oxygen saturation expressed in percentage of saturation (%)
pH	pH
Chlorophyll a	Chlorophyll a (µg/l)
Secchi depth	Secchi depth (m)
Nitrate	Milligram of Nitrate per litre (mg{NO3}/L)
Nitrite	Expressed in mass of Nitrite per volume (mg{NO2}/L). Conversion factor: 1 mg{N}/L = 3.2845 mg{NO2}/L
Ammonium	Expressed in mass of Ammonium per volume (mg{NH4}/L). Conversion factor: 1 mg{N}/L = 1.2888 mg{NH4}/L
Total phosphorus	Total phosphorus Expressed in mass of Phosphorus per volume (mg{P}/L).
Orthophosphates	Expressed in mass of Phosphate per volume mg{PO4}/L. Conversion factor: 1 mg{P}/L = 3.0662 mg{PO4}/L
Total nitrogen	Expressed in mass of Nitrogen per volume (mg{N}/L).
Silicate	Silicate expressed in mass of Silicate per volume mg{SiO3}/L. Conversion factor: 1 mg{Si}/L (Silicon) = 2.7090 mg{SiO3}/L

vi. Method of data collection codelist

Type: Suggested

Value	Definition	Short description
C	Calculated	
E	Estimated	
M	Measured	

vii. Volume of direct reuse of municipal wastewater per type of activity codelist

Type: Suggested

Value	Definition	Short description
Agri	Agriculture irrigation (e.g. food crops)	
Aqua	Aquaculture and fish ponds	
Dual	Dual water supply systems for urban non-potable use (toilet flushing, garden use)	
Indu	Industrial processes, water for manufacturing and construction industry (cooling and process water)	
Recr	Recreation (e.g. recreational water bodies, irrigation of areas for sports, etc.)	
Rech	Aquifer recharge (e.g. through injection wells for saline intrusion control)	
Rest	Water restoration and recreation of existing or creating new aquatic ecosystems	
Urba	Irrigation of public gardens and landscape, firefighting, street washing, dust suppression, etc.	

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Other	Other purposes	

Table D

Methodology	Data specifications	Equivalent in WISE if exist
The population as of the reference year (Year_H2020)	Type of element: non-common Datatype: integer Unit: inhabitants Min. size: 1 Max. size: 10 Min. value: 1 Max. value: 1000 000 000	

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