



GROWTH AND INNOVATION IN OCEAN ECONOMY – GAPS AND PRIORITIES IN SEA BASIN OBSERVATION AND DATA

EMODNET MedSea CheckPoint

Annex 1 to the Second DAR: Metadatabase contents and statistics

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1. Introduction

The Mediterranean CheckPoint metadatabase presently contains information about 47 different characteristic categories (P02 vocabulary), 23 P03 group of characteristics, 266 data sets descriptors, covering 16 INSPIRE themes (over a total of 34) and 6 environmental matrices.

The P02 definitions are given in the section “Supplementary material” of this Annex.

The input data sets metadatabase is accessible at: <http://www.emodnet-mediterranean.eu/browser/>

2. Statistics of the Input data sets

Figure A1.1 Number of input data sets for each challenge

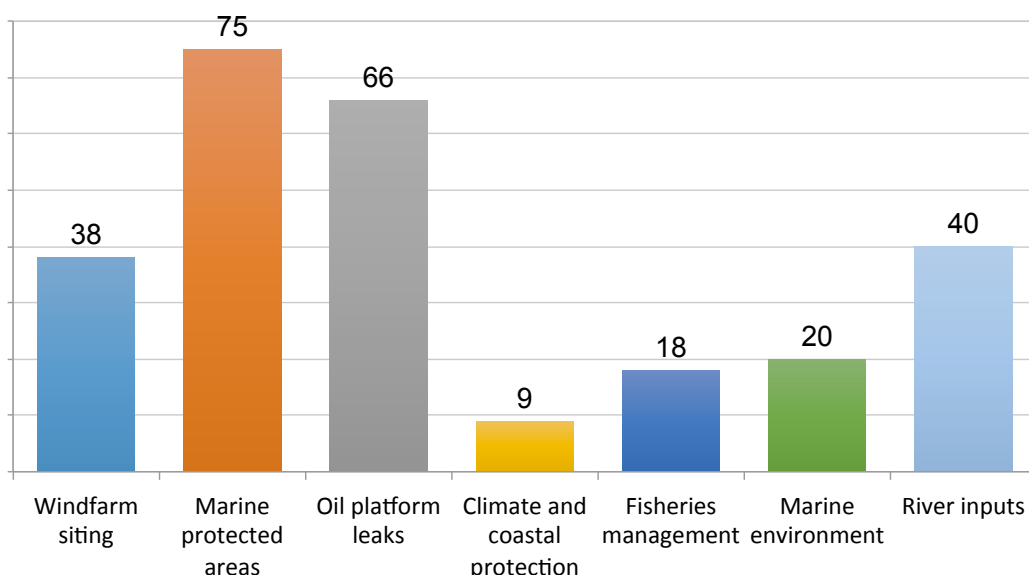


Table A1.1 number of input data sets as function of environmental matrices and Challenges

Matrix	Windfarm siting	MPA	Oil platform leaks	Climate and coastal protection	Fisheries mgnt	Marine env.	River inputs	TOTAL
Air	6	2	7					15
Biota/Biology	11	26	2		8		1	48
Fresh water							39	39
Human activities	6	4	5		8			23
Marine water	12	35	50	8		20		125
Seabed/Riverbed	3	8	2	1	2			16
TOTAL	38	75	66	9	18	20	40	266

Figure A1.2 Number of Input data sets as a function of environmental matrices and challenges.

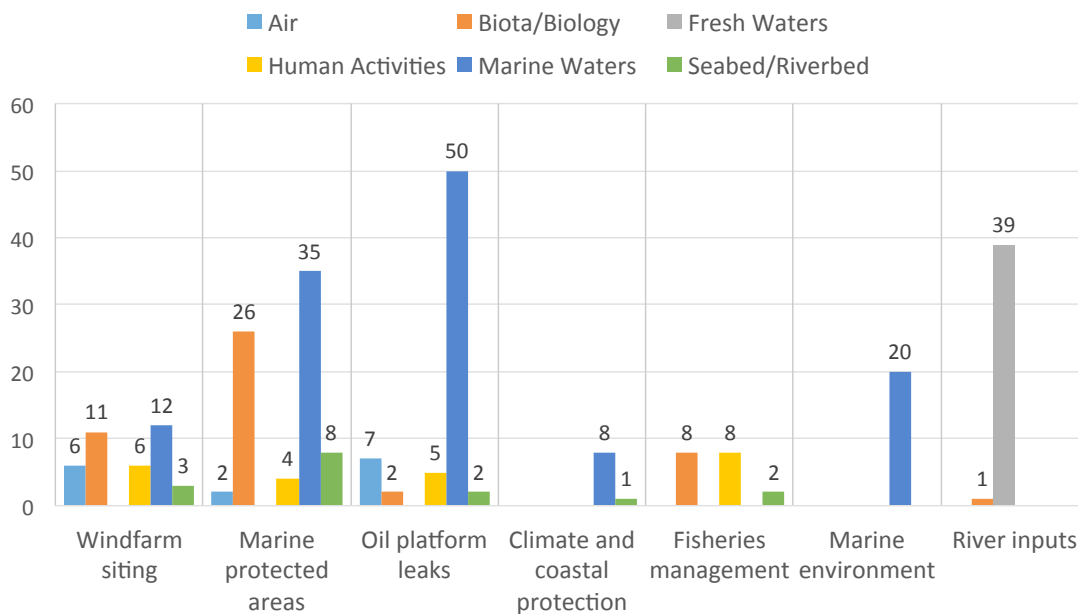


Table A1.2 Number of input data sets as a function of INSPIRE spatial themes (P22) and Challenges

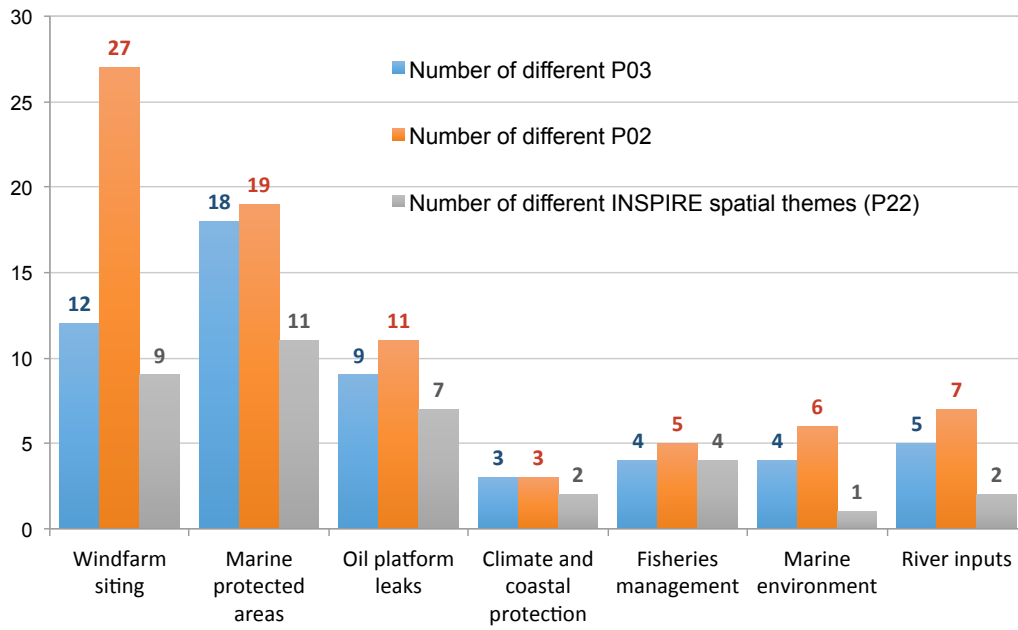
INSPIRE spatial theme	Ch1 Wind farm	Ch2 MPA	Ch3 Oil leaks	Ch4 Climate and coastal	C5 Fisheries mgnt	C6 Marine env.	C7 River inputs	TOTAL
Hydrography							39	39
Protected sites	11	20	3					34
Transport networks	3							3
Elevation	1	2	3					6
Geology		1		1	2			4
Area management / restriction / regulation zones & reporting units		9						9
Bio-geographical regions		1						1
Energy Resources	1							1
Environmental monitoring Facilities			1		8			9
Habitats and biotopes	1	15	2		1		1	20
Meteorological geographical features	5	1	7					13
Oceanographic geographical features	14	15	49	8		20		106
Population distribution and demography		1	1					2
Sea regions		2						2
Species distribution		8			7			15
Utility and governmental	2							2

services								
TOTAL	38	75	66	9	18	20	40	266

Table A1.3 Number of input data sets as a function of P03 and Challenges

P03 categories	Ch1 Wind farm	Ch2 MPA	Ch3 Oil leaks	Ch4 Climate and coastal	C5 Fisheries mgnt	C6 Marine env.	C7 River inputs	TOTAL
Administration and dimensions		5			8			13
Anthropogenic contamination			1					1
Biota abundance, biomass and diversity	5	1					1	7
Birds, mammals and reptiles	4	10						14
Carbon, nitrogen and phosphorus							16	16
Currents	2	1	14					17
Dissolved gases	0	2				4		6
Fish	1	1						2
Fisheries		2			7			9
Fluxes		2					10	12
Gravity, magnetics and bathymetry	1	1	2					4
Habitat	2	32	5		1			40
Human activity	6	4	1					11
Meteorology	6	2	7					15
Nutrients						9	4	13
Pigments		3				1		4
Rock and sediment sedimentology	1	1			2			4
Sea level	1	1		6				8
Sediment properties		2					9	11
Suspended particulate material		0						0
Terrestrial		1	1	1				3
Water column temperature and salinity	2	4	14	2		6		28
Waves	7		21					28
TOTAL	38	75	66	9	18	20	40	266

Figure A1.3 Number of characteristic categories identified by P02, P03 and P22 as a function of Challenges



3. Input data sets characteristic categories

Table A1.4 Number of input data sets as a function of P02 and Challenges

P02 category	Ch1 Wind farm	Ch2 MPA	Ch3 Oil leaks	Ch4 Climate and coastal	C5 Fisheries mgnt	C6 Marine env.	C7 River inputs	<i>TOTAL</i>
1. Administrative units	1	27	3					31
2. Air pressure	1							1
3. Air temperature	1							1
4. Atmospheric humidity	1							1
5. Bathymetry and Elevation	1	2	2					5
6. Bird behaviour	1	3						4
7. Bird counts	2							2
8. Bird reproduction	1							1
9. Cetacean abundance		1						1
10. Cetacean behaviour		3						3
11. Chlorophyll pigment concentrations in water bodies		3				1		4
12. Coastal geomorphology		1		1				2
13. Concentration of suspended particulate material in the water column							9	9
14. Depositional environment		1						1
15. Dissolved oxygen parameters in the water column		2				4		6
16. Dissolved total and organic nitrogen concentrations in the water column							5	5
17. Dissolved total or organic phosphorus concentration in the water column							6	6
18. Fauna abundance per unit area of the bed	3	1						4
19. Fish abundance in water bodies	2						1	3
20. Fish and shellfish catch statistics					6			6
21. Fish behaviour		1						1
22. Fish reproduction	1							1
23. Fishing by-catch					1			1

24. Habitat characterisation	2	2	2					6
25. Habitat extent		16			1			17
26. Horizontal platform movement					8			8
27. Horizontal velocity of the water column (currents)	2	1	14					17
28. Light extinction and diffusion coefficients		2						2
29. Lithology					2			2
30. Man-made structures	1							1
31. Marine archaeology	1							1
32. Marine environment leisure usage	1		1					2
33. Nitrate concentration parameters in the water column						4	5	9
34. Nutrient fluxes between the bed and the water column		2						2
35. Phosphate concentration parameters in the water column						4	4	8
36. Pollution events			1					1
37. River flow and discharge							10	10
38. Salinity of the water column	1	2				3		6
39. Sea level	1			6				7
40. Sedimentary structure	1							1
41. Spectral wave data parameters	1							1
42. Temperature of the water column	1	2	14	3		3		23
43. Terrestrial mapping			1					1
44. Transport activity	3							3
45. Wave direction	1		7					8
46. Wave height and period statistics	5		14					19
47. Wind speed and direction	2	2	7					11
<i>undefined</i>	1							1
TOTAL	38	75	66	9	18	20	40	266

Table A1.5: P02 characteristic categories being requested more than once by the Challenges.

P02 / Characteristic category	Number of characteristics	Challenges using the Characteristic
Administrative units	31	Ch2 - Marine protected areas Ch3 - Oil platform leaks
Temperature of the water column	22	Ch1 - Windfarm siting Ch2 - Marine protected areas Ch3 - Oil platform leaks Ch4 - Climate and coastal protection Ch6 - Marine environment
Wave height and period statistics	19	Ch1 - Windfarm siting Ch3 - Oil platform leaks
Habitat extent	18	Ch2 - Marine protected areas Ch5 - Fisheries management
Horizontal velocity of the water column (currents)	17	Ch1 - Windfarm siting Ch2 - Marine protected areas Ch3 - Oil platform leaks
Wind speed and direction	11	Ch1 - Windfarm siting Ch2 - Marine protected areas Ch3 - Oil platform leaks
Nitrate concentration parameters in the water column	10	Ch6 - Marine environment Ch7 - River inputs
Phosphate concentration parameters in the water column	8	Ch6 - Marine environment Ch7 - River inputs
Wave direction	8	Ch1 - Windfarm siting Ch3 - Oil platform leaks
Sea level	7	Ch1 - Windfarm siting Ch4 - Climate and coastal protection
Dissolved oxygen parameters in the water column	6	Ch2 - Marine protected areas Ch6 - Marine environment
Habitat characterisation	6	Ch1 - Windfarm siting Ch2 - Marine protected areas Ch3 - Oil platform leaks
Salinity of the water column	6	Ch1 - Windfarm siting Ch2 - Marine protected areas Ch6 - Marine environment
Bathymetry and Elevation	5	Ch1 - Windfarm siting Ch2 - Marine protected areas Ch6 - Marine environment
Bird behaviour	4	Ch1 - Windfarm siting Ch2 - Marine protected areas
Chlorophyll pigment concentrations in water bodies	4	Ch2 - Marine protected areas Ch6 - Marine environment
Fauna abundance per unit area of the bed	4	Ch1 - Windfarm siting Ch2 - Marine protected areas
Marine environment leisure usage	2	Ch1 - Windfarm siting Ch3 - Oil platform leaks

Table A1.6: The number of input datasets requested for the 47 different characteristic categories.

P02	Data sets
Administrative units	31
Air pressure	1
Air temperature	1
Atmospheric humidity	1
Bathymetry and Elevation	5
Bird behaviour	4
Bird counts	2
Bird reproduction	1
Cetacean abundance	1
Cetacean behaviour	3
Chlorophyll pigment concentrations in water bodies	4
Coastal geomorphology	2
Concentration of suspended particulate material in the water column	9
Depositional environment	1
Dissolved oxygen parameters in the water column	6
Dissolved total and organic nitrogen concentrations in the water column	5
Dissolved total or organic phosphorus concentration in the water column	6
Fauna abundance per unit area of the bed	4
Fish abundance in water bodies	3
Fish and shellfish catch statistics	6
Fish behaviour	1
Fish reproduction	1
Fishing by-catch	1
Habitat characterisation	6
Habitat extent	17
Horizontal platform movement	8
Horizontal velocity of the water column (currents)	17
Light extinction and diffusion coefficients	2
Lithology	2
Man-made structures	1
Marine archaeology	1
Marine environment leisure usage	2
Nitrate concentration parameters in the water column	9
Nutrient fluxes between the bed and the water column	2
Phosphate concentration parameters in the water column	8
Pollution events	1
River flow and discharge	10
Salinity of the water column	6
Sea level	7
Sedimentary structure	1
Spectral wave data parameters	1
Temperature of the water column	23
Terrestrial mapping	1
Transport activity	3
Wave direction	8
Wave height and period statistics	19

Wind strength and direction	11
<i>undefined</i>	1
TOTAL	266

4. Supplementary material

This section gives the definition of the SeaDataNet categories of characteristics in use in the DAR. For additional information about the SeaDataNet Common Vocabularies and the lists (P03,P02,P01) in use in this deliverable, please refer to :

<http://www.seadatanet.org/Standards-Software/Common-Vocabularies>

SDN P02 code	SDN P02 discovery category name	SDN P02 definition
ADUN	Administrative units	Parameters (including geometries, labels and categorizations) relating to areas where authorities have and-or exercise specific rights or obligations.
CAPH	Air pressure	Measurements of air pressure as the dependent variable (ie excluding air pressure measured to specify the z co-ordinate of a balloon or sonde), including derived parameters such as tendency (rate of change) and related parameters such as air density.
CDTA	Air temperature	Parameters quantifying the degree of hotness of the atmosphere. Specifically excludes indirect measurements of other parameters such as wet bulb temperatures.
CHUM	Atmospheric humidity	Parameters that either quantify the water content of moist air or are specifically used in its determination (eg wet bulb air temperature)
MBAN	Bathymetry and Elevation	Depth of the water column or elevation of land surface relative to sea surface, geoid or other datum
GP088	Bird behaviour	Parameters describing the actions or reactions of birds (Class Aves), usually in response to the environment. Includes both parameters mapped to taxa and those mapped to non-taxonomic groupings.
BRDA	Bird counts	Parameters quantifying the number of birds (Class Aves) in a survey but not expressed per unit area. Includes presence/absence indicators.
GP04	Bird reproduction	Parameters related to the reproduction of birds (Class Aves)
CETA	Cetacean abundance	Parameters that specify the number of specified members of Order Cetacea present at a particular time and location, including presence/absence indicators.
CEBH	Cetacean behaviour	Parameters describing the actions or reactions of cetaceans (Order Cetacea), usually in response to the environment. Includes both parameters mapped to taxa and those mapped to non-taxonomic groupings.
CPWC	Chlorophyll pigment concentrations in the water column	Includes all variants of chlorophyll expressed in terms of per unit volume or unit area of the water column. Does not include data expressed per unit mass of SPM.
COGE	Coastal geomorphology	All parameters associated with coastal landforms such as beaches and dunes including morphology, evolution and associated transport phenomena
TSED	Concentration of suspended particulate material in the water column	Parameters quantifying SPM concentration in the water column by weight, by volume or in terms of turbidity
DPEV	Depositional environment	Parameters characterising the environment in which sediments were deposited either by observation or interpretation of sedimentary rocks and unlithified sediments.
DOXY	Dissolved oxygen parameters in the water column	All dissolved oxygen parameters (including saturation and utilisation) for the water column
TDNT	Dissolved total and organic nitrogen concentrations in the water column	Concentration of total (organic plus inorganic) or organic dissolved nitrogen per unit volume of the water column. Grouped together as organic nitrogen frequently determined as total nitrogen.
TDPX	Dissolved total or organic phosphorus concentration in the water column	Concentration of total (organic plus inorganic) or organic dissolved phosphorus per unit volume of the water column. Grouped together as organic phosphorus frequently determined as total phosphorus
FABD	Fauna abundance per unit area of the bed	Any fauna (class Animalia) abundance per unit area of sea, river or lake bed. Broad group overlapping a number of more specific groups that should be used preferentially, but this group is provided as an alternative to one-to-many mappings.

FATX	Fish abundance in water bodies	Parameters that quantify the numbers of fish (Osteichthyes, Agnatha and Chondrichthyes) at a given location in any body of salt or fresh water.
FCST	Fish and shellfish catch statistics	Parameters quantifying and describing biota take by fishing activities
GP085	Fish behaviour	Parameters describing the actions or reactions of fish (Osteichthyes, Agnatha and Chondrichthyes), usually in response to the environment. Includes both parameters mapped to taxa and those mapped to non-taxonomic groupings.
FREP	Fish reproduction	Parameters that quantify the fecundity, reproductive rates or nature of reproduction in fish (Osteichthyes, Agnatha and Chondrichthyes).
GP080	Fishing by-catch	Parameters quantifying the capture of non-target species during commercial and non-commercial fishing trips
HBCH	Habitat characterisation	Parameters specifying the physical or chemical environment of a place where an organism is found.
HBEX	Habitat extent	Parameters specifying the vertical and horizontal spatial extent of the ecological character of a place where an organism is found
APDA	Horizontal platform movement	All parameters relating to horizontal platform travel, including distance run
RFVL	Horizontal velocity of the water column (currents)	Parameters expressing the velocity (including scalar speeds and directions) of water column horizontal movement, commonly termed Eulerian currents
EXCO	Light extinction and diffusion coefficients	Parameters relating to the extent of light penetration into the water column
LITH	Lithology	Parameters describing rocks on the basis of physical characteristics such as colour, structure, mineralogy and grain size
PPAB	Light absorption in the water column	Water column spectral absorption parameters
MARC	Marine archaeology	Parameters related to the study of human interaction with the sea through the investigation of associated physical remains, be they vessels, shore side facilities, port-related structures, cargoes, human remains or submerged landscapes
MLES	Marine environment leisure usage	Parameters quantifying the extent and nature of recreational activities in coastal waters, estuaries and their margins such as beaches.
NTRA	Nitrate concentration parameters in the water column	Nitrate concentration parameters (including statistical parameters such as standard deviation) in the water column. Includes nitrate+nitrite, which is often loosely referred to as nitrate.
SAMO	Nutrient fluxes between the bed and the water column	Parameters quantifying the exchange of nutrients between the bed (ie the sediment) and the water column sometimes termed benthic fluxes
PHOS	Phosphate concentration parameters in the water column	Phosphate concentration parameters (including statistical parameters such as standard deviation) in the water column
GP001	Pollution events	Parameters quantifying the accidental spillage of liquid or dry pollutants from vessels or marine industries. Parameters may include quantities of pollutant, areas affected and event duration.
RVDS	River flow and discharge	Parameters related to the volume of water passing through a point in a river system per unit time, including the rates of freshwater, dissolved material and particulate load discharge from a river into the sea.
PSAL	Salinity of the water column	Parameters quantifying the concentration of sodium chloride in any body of water at any point between the bed and the atmosphere
ASLV	Sea level	Measurements and predictions of the displacement of the water column surface from a fixed, stable reference
SSTR	Sedimentary structure	Parameters characterising structure in sedimentary rocks and unlithified sediment such as bedding, lamination and bioturbation.
WVSP	Spectral wave data parameters	Parameters for directional and non-directional spectral wave data, excluding wave directions derived from spectral data.
TEMP	Temperature of the water column	Temperature parameters in any body of water at any point between the bed and the atmosphere excluding the top few microns sampled by radiometers known as the skin
COAS	Terrestrial mapping	Parameters relating to the mapping of terrestrial features, including coastlines
TRAN	Transport activity	Parameters quantifying the level of activity moving people or cargo from one place to another.
GWDR	Wave direction	Direct measurements (including visual estimates) plus statistically derived parameters
WVST	Wave height and period statistics	Statistical parameters derived from wave records to express wave height and period
EWSB	Wind strength and direction	All parameters pertaining to wind velocity in either cartesian or polar coordinates. Units are a watchpoint as some codes specify knots.