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

THE MEDITERRANEAN SEA

D12.2.3 Six-monthly Progress Report (04/12/2014– 03/06/2015)

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Executive Summary

The third six months of the project have produced:

1) the First Data Adequacy Report;
2) the First Panel Report;
3) the Interim Report;
4) the first version of the MedSea CheckPoint Service.

For the purpose of the EMODnet Medsea CheckPoint, it was decided that the GIS technology called "Sextant" should be used to store the information on the upstream data sets and the targeted products from the Challenges, as well as to handle the information needed for the establishment of the fitness for use indicators. Sextant provides access to various geographical data via web services using well defined standards. It uses Geonetwork to set up the Catalogue Services for the Web and is used by several EU projects such as EMODnet, MyOcean, SeaDataNet.

All the Challenges contributed very actively to the consolidation of the first metadatabase included in Sextant, considering at this time the upstream datasets and providers. This metadatabase provided the basic material for the first DAR.

The Experts from the Panel reviewed the content of the DAR and corrections have been already included in the final version of the DAR.

In conclusion, the project has shown to be capable to follow the major milestones and deliverables as expected from the tender and no changes are foreseen for the next six months on the work plan schedule.

1. WP1: Literature Review (IFREMER)

This Workpackage was completed at month 10 (September 23, 2014) of the first year and the past reports have documented the development.

2. WP2 Challenge 1: Windfarm siting (NKUA)

The main objectives of WP2 can be summarized as follows:
1. The development of a high resolution data base in which the necessary environmental data and human activities data for supporting wind farm siting in the sea areas between Spanish-French and French-Italian borders will be stored.
2. The statistical analysis of this database in order to reach qualitative information and appropriate indexes with threshold values for wind farm site assessment.

Within this framework, the development of a complete Structured Query Language (SQL) database, in which high resolution atmospheric, wave, tidal and ocean current modelled data have been compiled, has been completed during the reporting period. More precisely, a number of characteristics has been included in the database, i.e.:
1) The numerical model zonal and meridional wind components, air pressure, air density, specific humidity of the atmosphere and air temperature at different vertical levels (10, 40, 80, 120 and 180m) for the atmospheric parameters.
2) Numerical model fields for sea level, water temperature, water salinity, water zonal velocity component, water meridional velocity component as well as the full 2 dimensional wave spectra over frequencies and directions, wave height (significant), mean wave direction, mean (energy) and peak wave period, swell wave height, maximum expected wave height.
3) Biology as well as seabed matrix characteristics for birds, marine mammals, fishes, bathymetry and sediment structure.

The above data sets descriptions have been inserted in the CheckPoint metadatabase following the general classification criteria of the project.

A full statistical analysis package has been and is being developed to provide a detailed and complete description of the data. In particular, the following statistical indexes will be calculated for the characteristics listed in 1) and 2) above.

a. The mean value:

$$\mu = \frac{1}{N} \cdot \sum_{i=1}^{N} x(i)$$

,
where x denotes the characteristics and N the size of the sample.

b. The standard deviation:

$$\sigma = \sqrt{\frac{1}{N} \cdot \sum_{i=1}^{N} \left(x(i) - \mu\right)^2}$$

,
indicating the variability of the characteristics.

c. The skewness:

$$g_1 = \frac{\frac{1}{N} \cdot \sum_{i=1}^{N} \left(x(i) - \mu\right)^3}{\sigma^3}$$

which is a measure of the asymmetry of the probability distribution,

d. The kurtosis:

$$g_2 = \frac{\frac{1}{N} \cdot \sum_{i=1}^{N} \left(x(i) - \mu\right)^4}{\sigma^4} - 3$$

which is a measure of the "peakness" of the probability distribution and the impact of possible extreme values.

Each characteristics will be visually and numerically described by a probability distribution function (pdf) fitted on the data at each model grid point. More precisely, a number of pdfs will be tested: Logistic, Normal, Gamma, Log-Gamma, Log-Logistic, Lognormal, Weibull, Generalized Logistic while different statistical fitted tests were used: Kolmogorov-Smirnov, Anderson-Darling. The above analysis will be possible for different timescales including the complete available time period (10-years), seasonal and yearly time windows.

3. WP3 Challenge 2: Marine Protected Areas (HCMR)

During the third six months of the project this challenge has been collecting information and characterizing upstream data related to Marine Protected Areas (MPAs).

The objective of this challenge is to draw a synthesis at the basin scale of the Mediterranean MPA networks, and achieve a holistic approach to environmental protection. The information collected will be used to assess coherence, adequacy and representativeness of the MPAs as listed in Art 13(4) of the MSFD. The ecological connectivity of the existing MPA network will be assessed by the evaluation of the migration routes of key species through wildlife satellite telemetry programs (ARGOS data) in collaboration with CLS. The final products will be GIS maps indicating the “efficiency” of the existing network. Maps on the available scientific information will be created using ArcGIS and will be disseminated through the project’s portal.

Since October 2014, we started to define the methodology and workflow for Challenge 2. Additionally, we have defined the needs and the challenge products characteristics in order to produce the GIS datasets and the GIS products and incorporate them in the GIS portal and the Medesea-ck-pt project web. One of the results of the Literature Review is that there is a lack of appropriate data to answer tender’s questions related to the assessment of the Mediterranean MPAs (Fig. 3.1). An attempt to assess the adequacy of the network will be developed. Moreover other criteria for the network assessment such as replication of the conservation features will be tested.

Complementarily we are also compiling information on scientific publications and reviews indexed at SCOPUS and WEB OF SCIENCE databases related to Mediterranean MPAs and their conservation features along the Mediterranean.

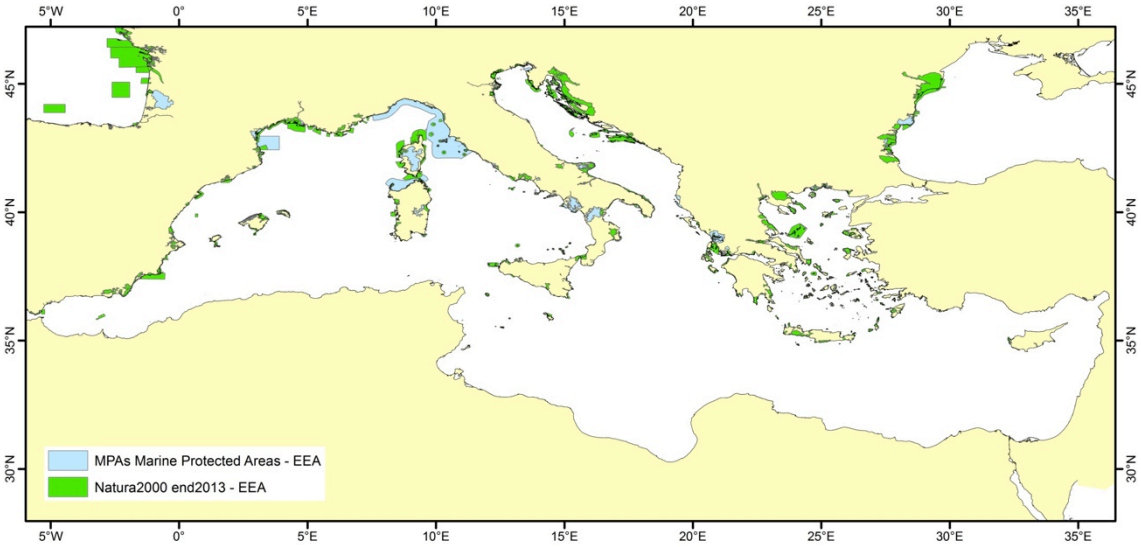


Fig. 3.1 Marine Protected Area network in the Mediterranean Sea

Sextant has been used for describing the monitoring input data and handling the necessary information to establish the fitness for use according to the guidelines for evaluation procedures of the ISO19157 standard on quality information for geographic data. Sextant catalogue of monitoring data used the SeaDataNet Common Vocabularies (http://www.seadatanet.org/), the European Directory of Marine Organisations (EDMO), the European Directory of Marine Environmental Research Projects (EDMERP) for the classification of the data sets and for the management of the data sources.

After defining the characteristics of Challenge 2 the following validation procedure has been carried out:

1. Verifying that all information was inserted properly into Sextant Catalogue;
2. Taking note of possible 'internal improvements' that could be completed later
3. Making 'Public' the metadata sources

All of our metadata succeed the validation and finally they were published to make all metadata visible from the website.

The results of the editing and validation processes are presented in table 3.1.

Table 3.1 List of Challenge 2 characteristics according to the revised Template for Sextant Medatabase

For Processing level: A- Observation (raw, QC) B- high level analyzed observational product (L1,L2,L3, L4 for satellite, merged from many datasets, etc.) C- Forecast/Hindcast D- Publication O- Other
For Hierarchy data level: 1- dataset 2- collection of datasets 3- data source not found
For production mode: 1.delayed 2.real-time

Identifier	**Identifiant**	**Validation**	Environmental matrix	Characteristics description	Processing level	Production mode	Hierarchy data level
1	7c6c82cb-110c-4dac-b740-597d53a85652	ok	Marine Water	Marine Protected Areas	O	1	1
2	908b0ad8-6b47-4c65-adcb-4feebfbf3862	ok	Marine Water	Marine Protected Areas	O	1	1
3	5c9f9638-61d7-4147-bdfd-a4ba6ccce47e	ok	Marine Water	SACs / Habitats Directive	O	1	1
4	8f299a1d-cc4b-466b-8da9-3d573d2adf64	ok	Marine Water	SPAs / Birds Directive	O	1	1
5	48d234bf-3b18-4be7-b559-2f0e2683ede8	ok	Marine Water	Marine Protected Areas	O	1	1
6	8652b293-ecd9-4354-800b-c8e7a93cf44f	ok	Marine Water	Marine Protected Areas	O	1	1
7	41cd08fb-8fdb-4d01-a0d3-d0e8ab8b53c4	ok	Marine Water	SPAMIs	O	1	1
8	a75ef314-5e37-4f1a-bdfc-6f762cb3b449	ok	Marine Water	First marine world heritage site listed in 1983	O	1	1
9	5c9e42bc-6d91-490a-a4ca-ca6152ded839	ok	Marine Water	Marine Ramsar sites	O	1	1
10	e68266ff-0dd4-43bb-b8cc-b34c325761d1	ok	Marine Water	Important sea birds areas	O	1	1
11	d993f79b-a82b-4a02-8a49-8b1c5886737e	ok	Marine Water	EBSAs	O	1	1
12	41c7d2aa-60bb-470b-ba5a-80c09c84993b	ok	Marine Water	Marine Protected Areas	O	1	1
13	096f2a9a-1931-4ade-82b0-796da82d3959	ok	Marine Water	Existing and proposed MPAs for whales and dolphins in the Mediterranean and the Black Seas	O	1	1
14	d894dd03-8050-42d1-8cc8-18475c448592	ok	Marine Water	Exiisting and Proposed Protected Areas	O	1	1
15	d54ff556-e579-4608-b383-94ebe5ef6791	ok	Marine Water	Existing and proposed MPAs for whales and dolphins in the Mediterranean and the Black Seas	O	1	1
16	81a9005a-6c61-4924-806f-b6fbc8b435d0	ok	Marine Water	Proposed MPAs	O	1	1
17	830b5c3d-b8a8-4644-8be7-5bc5388c3939	ok	Marine Water	Proposed MPAs	O	1	1
18	33985b32-98fb-4228-b416-2945f5f0a6c9	ok	Marine Water	Exiisting and Proposed Protected	O	1	1

				Areas			
19	906834dd-8115-4dd2-9129-088c52251edc	ok	Marine Water	Fisheries Restricted Areas	O	1	1
20	461ef54d-3194-4465-b02f-cc77ba1e95c0	ok	Marine Water	Fisheries Restricted Areas	O	1	1
21	4ec74993-ec49-43b7-b468-58b6aa9ac8bf	ok	Air	Wind speed	B	1	1
22	9b37d5b6-7095-4c68-8020-974e1bccd20c	ok	Air	Wind direction	B	1	1
23	1d5fea9d-43d1-4dd5-bc2e-2e14178342e7	ok	Marine Water	current direction	B	1	1
24	e433b2ba-9726-45ea-a8a3-30f8f24114b8	ok	Seabed	sea cave areas (polygon)	D	1	1
25	019aa93b-3dcd-4880-8352-bf0870316f7d	ok	Seabed	Position (horizontal spatial coordinate) of Hydrothermal vents and cold seeps	O	1	1
26	b2f53247-7901-4953-9e12-76a0de0be630	ok	Marine waters	current speed	B	1	1
27	f39ea019-1e62-490e-9dcb-37c7200a0f82	ok	Seabed	coastline	O	1	1
28	e530a92d-33b0-4765-9016-2df131b852e5	ok	Biota	seagrass distribution	O	1	1
29	35ea4143-a9c9-43b8-adbb-43dfc413399c	ok	Biota	seagrass distribution	O	1	1
30	43fc8a6e-6637-4512-a0be-c5ced5f087c1	ok	Biota	Posidonia oceanica	O	1	1
31	5346bbd9-4ece-4770-9da9-5d59d49521f6	ok	Biota	Posidonia oceanica	O	1	1
32	df075b62-3af0-45d3-87a3-dab77fdcca7b	ok	Biota	Posidonia oceanica	D	1	1
33	ec0050ef-436b-4893-89db-4cf00370e952	ok	Biota	Cystoseira	O	1	1
34	17bbc529-4c5a-425e-83ed-531c3fe6fec3	ok	Biota	Cystoseira	O	1	1
35	ebdac416-2785-460a-82a9-8f6eb89ea1ae	ok	Biota	Coralligenous formations	O	1	1
36	a0caa132-5c64-4843-a0ad-bd79515ababc	ok	Biota	Coralligenous formations	O	1	1
37	6aa04103-d99f-4a26-a5c9-5d4effe6012c	ok	Biota	Coralligenous formations	O	1	1
38	b9a6f802-2964-4c3a-a471-8a2d4c44287a	ok	Biota	Maerl beds	O	1	1
39	c4f93c39-760b-4ab7-aed3-a30662ab1b85	ok	Biota	Maerl beds	O	1	1
40	a84bf03c-a72e-4234-8fba-8793ff57d043	ok	Biota	polygons of cetacean abundance	O	1	1
41	216f7c54-14ae-400a-bc19-87f08a540d17	ok	Biota	trajectories	O	1	1
42	bea14e5e-4c7d-4e65-9b3d-ba9af9d4b6c1	ok	Biota	Seabirds (counts?)	O	1	1
43	265a7a68-4a18-4520-bea3-cc9bcc3e4068	ok	Biota	(Seabirds) (counts ?)	O	1	1
44	abdcd985-0484-44e5-bed5-0bb20a22cb59	ok	Biota	Seabird species distributions (polygon)	O	1	1

45	fb45cf95-64d2-42b5-90c2-578cf2dcd5a5	ok	Biota	trajectory of birds	O		1
46	8c323070-5f5a-46dc-ac64-a4249703f9b0	ok	Biota	Marine turtles distribution (polygon)	O	1	1
47	a6e99060-dff1-41af-b5df-ef7e3f999cfb	ok CHANGE THE code GP088 TO GP068 (BIRD BEHAVIOUR)	Biota	Marine turtles trajectories	O	1	1
48	d8d8d360-5d47-4c6e-8b4d-4994851fe055	ok	Biota	Monk seal (seal abundance ?)	O	1	1
49	a96de9f8-43d6-45f4-bf5e-bbb39a3df645	ok	Biota	pelagic fish from CLS?	O	1	1
50	0155f6da-0d09-44d3-8c87-89beb09cc6a0	ok	Biology	fish abundance from model	O		1
51	ce7fbda2-90a6-45b9-b467-0dc2f0298938	ok	Biology	Feeding, breeding, wintering or resting areas	O	1	1
52	e37db836-2e88-4509-bdcc-1cc1d50e3780	ok	Biology	Feeding, breeding, wintering or resting areas	O	1	1
53	e799f3cc-72a6-463e-8c12-fb426f62f8bf	ok	Biology	Feeding, breeding, wintering or resting areas	O	1	1
54	f477a09a-f841-452b-be2c-f317814c0ffb	ok	Biota	Feeding, breeding, wintering or resting areas	O	1	1
55	e886be11-dfd3-42a8-9b5a-6b929af56a2c	ok	Biota	Populations of protected species at any stage of their life cycle and migratory patterns	O	1	1
56	30e85320-0104-45b7-944e-dc5c489624d3	ok Change of the data provider	Biota	Populations of protected species at any stage of their life cycle and migratory patterns	O	1	1
57	4e8586eb-ad85-461f-b732-25fa26623346	ok	Biota	Populations of protected species at any stage of their life cycle and migratory patterns	O	1	1
58	8f956ee5-7710-410a-a59e-c3d7b15a7383	ok	Seabed	Populations of protected species at any stage of their life cycle and migratory patterns	O	1	1
59	d255deba-9d62-4612-99af-7b14868c2880	ok	Seabed	Bathymetry	O	1	1
60	f7d9d06b-ad35-4a95-a17b-3f3b90d26d8b	ok	Marine water	Description of depositional environment type of sediment by classification to a term from CGI		1	1

				Event Environment Vocabulary (TypeDepEnvSed)			
61	0f679954-4a21-45fc-9437-a4ad380980ea	ok but in sextant the inspire code 15 does not exist	Marine water	CHLTVOLU (chlorophyll (mean))	O	1	1
62	185c3760-05b4-444e-b7df-f012f088c79b	ok but in sextant the inspire code 15 does not exist	Marine water	TEMPPR01 (temperature (surface))	O	1	1
63	dec0292a-fc7c-49d0-83cf-27aa553fb09a	ok but in sextant the inspire code 15 does not exist	Marine water	TEMPPR01 (temperature (mean))	O	1	1
64	4b468346-ed18-40e5-9f1e-33a6327d4993	ok but in sextant the inspire code 15 does not exist	Marine water	TEMPPR01 (temperature (bottom))	O	1	1
65	97a800f8-797e-45d6-bf41-6a19b40cf62f	ok but in sextant the inspire code 15 does not exist	Marine water	ASLTZZ01 (salinity (surface))	O	1	1
66	8dc0ebee-f661-41b8-97c0-5c4ebd163dc1	ok but in sextant the inspire code 15 does not exist	Marine water	ASLTZZ01 (salinity (mean))	O	1	1
67	18b4c735-8cd0-4072-9b59-b7b5c1b33f99	ok but in sextant the inspire code 15 does not exist	Marine water	ASLTZZ01 (salinity (bottom))	O	1	1
68	f79536f4-acc8-4911-8f17-011f6290148d	ok	Marine water	DOXYZZ01 (dissolved oxygen (surface))	O	1	1
69	01223a0d-f21b-4fcd-8a4b-d2ad678d942a	ok	Marine water	DOXYZZ01 (dissolved oxygen (bottom))	O	1	1
70	c8cf8333-adda-4dc1-8242-47215ff5081a	ok	Seabed	SAMOISSS (nutrients (mean))	O	1	1
71	88ef998b-3b02-4858-ac0e-4fb01cd12be3	ok	Seabed	Seabed characteristics and substrate	B	1	2
72	6a1b86ae-4938-4e49-8a0c-384f296b2c14	ok	Threats	Energy at the seabed	B	1	1

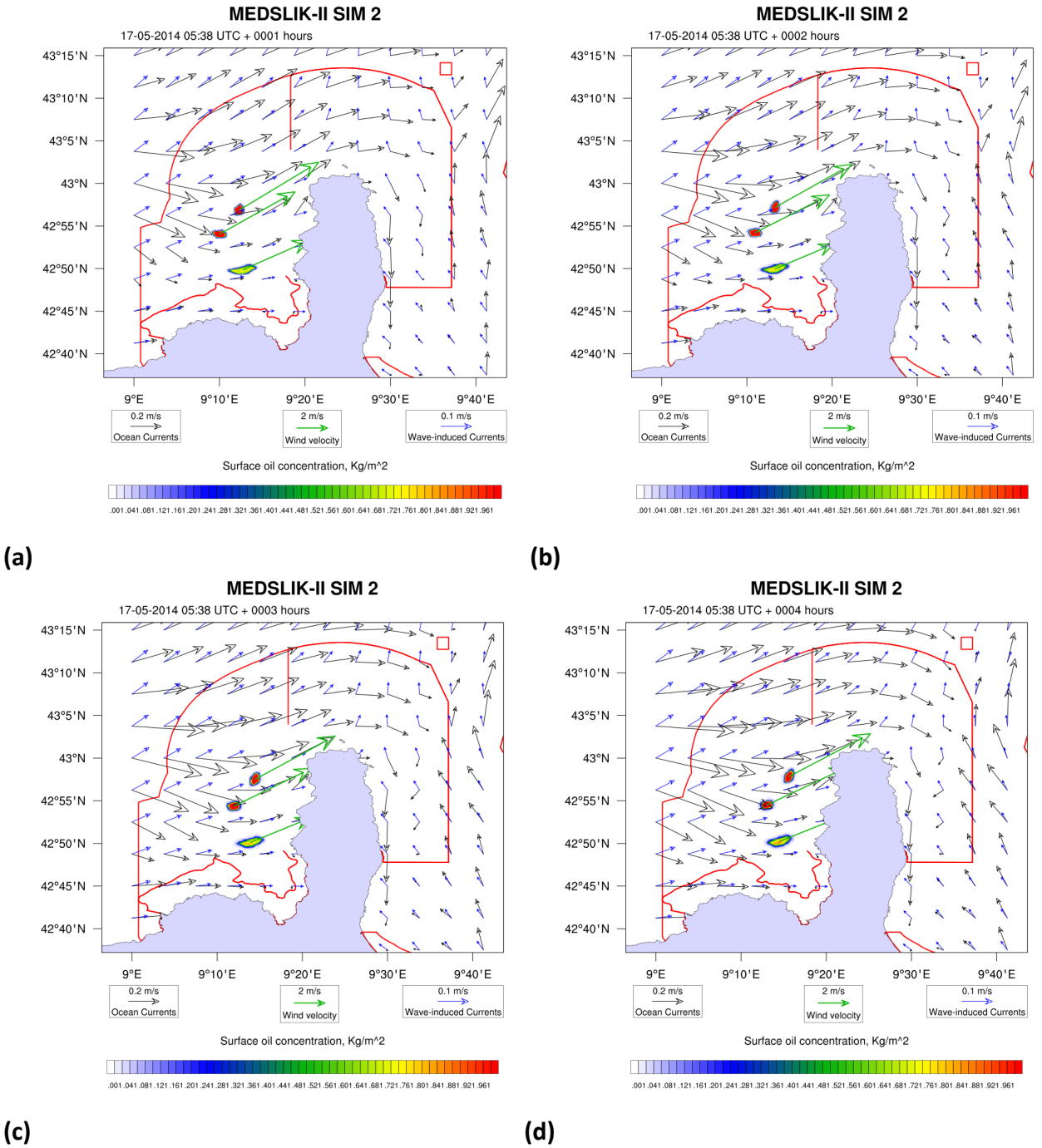
73	9688e314-c022-4a5d-98be-258dc51443d7	ok change of inspire code	Threats	Invasive species	A	1	1
74	c8384109-d056-4427-a87f-ac6a2b33f2e5	ok change of inspire code	Marine waters&Biology	ARGOS collected parameters not defined	B	1&2	2
75	f1287383-eece-404f-8154-56c385be5571	ok change of inspire code	Marine Water	Wildlife tracking	metadata	1&2	2

All metadata of Challenge 2 were published in the Checkpoint Service website.

4. WP4 Challenge 3: Oil platform leak (INGV)

Challenge 3 contributed to the preparation and validation of the Metadatabase for the input data sets required by the CheckPoint Catalogue. This Challenge input information contributed to the evaluation of all the elements of the "availability" assessment criteria in the first DAR. The targeted product for this Challenge has been activated after the first six months and consists of an Oil Platform Leak Bulletin (http://www.emodnet-mediterranean.eu/emodnet-wp4-oil-platform-leak-bulletin/).

The OPL Bulletin has been improved to include and highlight protected areas from NATURA2000 database in the surrounding of the oil slick scenario. Further work is on-going to include other marine protected areas from different data sources and other types of vulnerability data.
Figure 4.1 is an example of an OPL Bulletin visualization. Four plots show the fate of three oil slicks at hourly frequency. Oil concentration at the surface is visualized with colors from white to red in kg/m2, surface currents – black arrows -, surface Stokes' drift –blue arrows- and wind –green arrow- calculated at the gravity center of each slick. Red line encloses the marine protected area from NATURA2000 database. Both oil spill models outputs will be integrated with the NATURA2000 database and will include the same information.



(a) (b)

(c) (d)

Figure 4.1 Example of OPL Bulletin output of an oil slick scenario offshore northern coast of Corsica. The oil spill movement is visualized at the surface at hourly frequency.

5. WP5 Challenge 4: Climate and Coastal Protection (SOCIB)

During the third six months of the project this Challenge has been revising and consolidating upstream data description and characterization as a contribution to the first Fitness for purpose analysis and the first Data Adequacy Report.

The main efforts have been devoted to the upstream data compilation and production of results (i.e. mean sea level for the last 50 years from tide gauge) that are still in process. This work deals with sea temperature, mean sea level and internal energy (fig. 5.1).

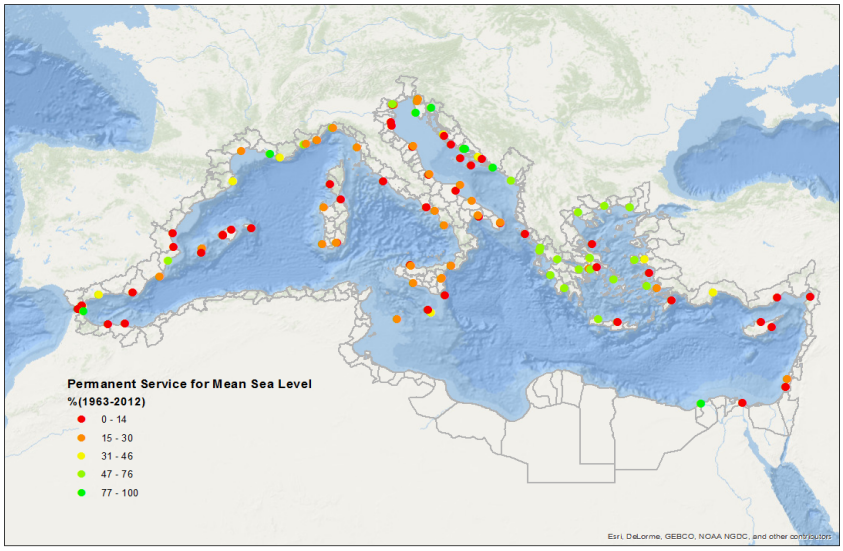


Fig. 5.1 Permanent service for mean sea level stations in the Mediterranean Sea for during 1963-2012 period. .

On the other hand the survey on coastal protection issues, by means of experts and National Coastal Management Agencies and publication scientific databases, has been finished and the results (available information on sediment mass balance and coastal retreat) are being produced and mapped (Fig. 5.2).

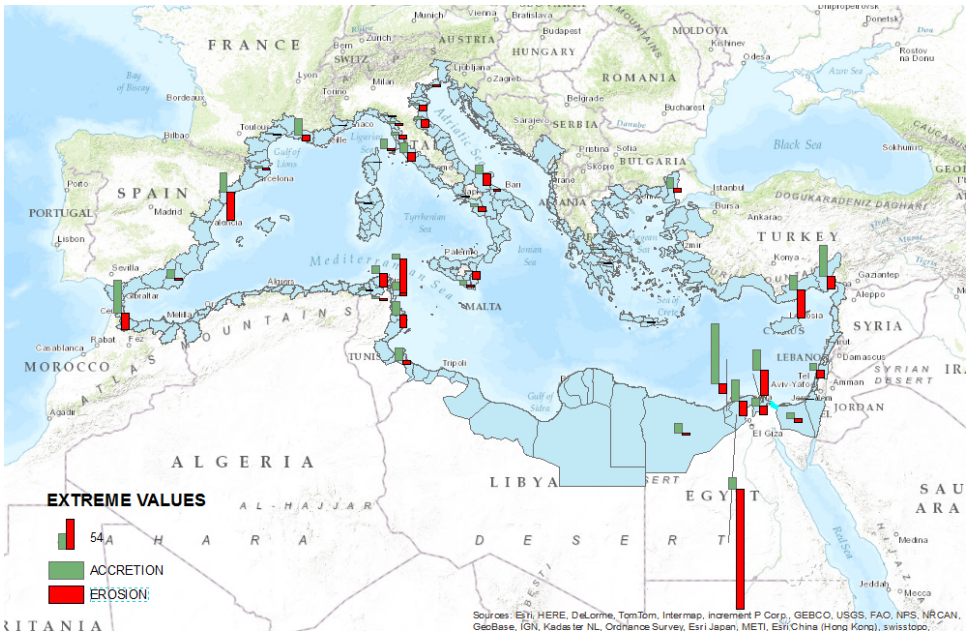


Fig. 5.2. Sediment mass balance (shoreline change in m/yr) from scientific papers summarized in SCOPUS and WOS databases.

Complementarily we also have been developing a set of tools in order to assign marine data (i.e. sea temperature, sea level change from altimetry or models) to specific NUTS3. These methods incorporate different interpolation methods and different variables, such ach the definition of coastal water by EU policy, in order to define the NUTS#3 extent in sea-water (Fig. 3). At this point, we have concentrated many efforts on base layer works (i.e. defining NUTS3 for non EU regions), making an extension of them into the sea using different methods, and testing different techniques to interpolate thematic data (mean sea level, sea temperature) in order to produce requested NUTS3 data and time series.

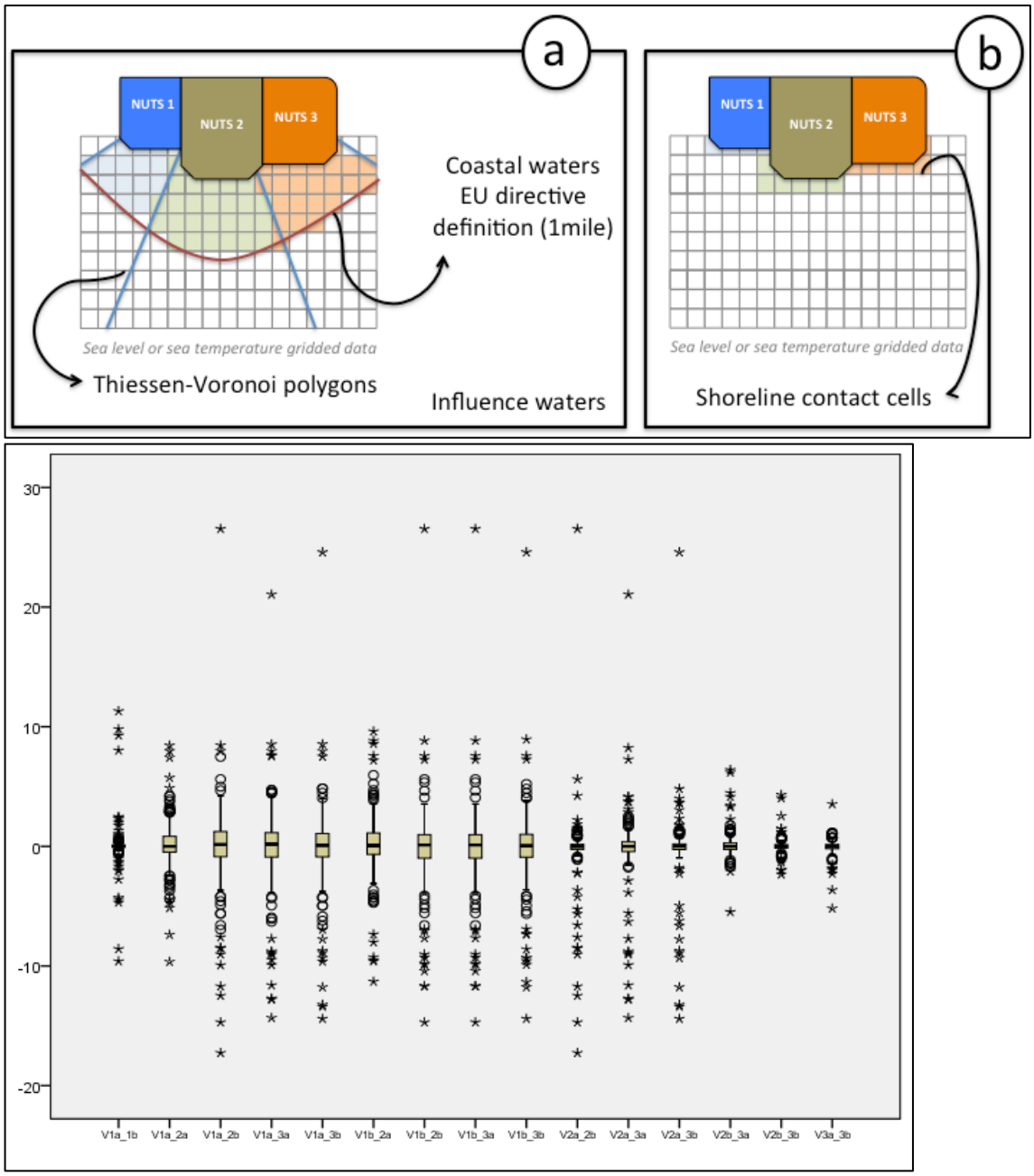


Fig. 5.3 Upper panel: The two main approaches used for sea regionalization, from these major approaches there are others changing the coastal water definition or the way to interpolate date (buffer size, gridded data, point data, etc). Lower panel: Differences between the results for a 50yr mean sea level obtained using different variations of the major sea regionalization methods.

6. WP6 Challenge 5: Fishery Management (CNR)

During the third six months of the project this challenge has been collecting information and characterizing upstream data related to fishery catches (Task 1) and fishery (trawling) impact on the sea floor (Task 2).

In the framework of Task 1, the Challenge 5 targeted product is a set of spreadsheets containing mass and number of landings for different species. Thus a first version of the spreadsheets was completed which contained synoptic tables with FishStat FAO data, DCF data available from JRC and from ICCAT. In Table 6.1 the main features of the datasets are summarized.
Moreover, a specific data call has been lunched by DGMARE (see Annex 1) in order to collect information to compile data products as specified by the present Tender in the framework of Challenge 5 for the countries involved in the data collection framework. Such data refer to the species which are not present in the datasets provided by JRC.

Table 6.1 – Data features of TASK 1 in the framework of challenge 5

	FishStat FAO	DCF data from JRC	ICCAT database
Period	1970 - 2013	2002 - 2013	1950 - 2013
Typology of data	Landings in tons	Landings and discards in tons	Landings in tons
Species coverage	All commercial species	Selected target species	Commercial large pelagics
Countries	All Mediterranean countries	European countries	All Mediterranean countries
Unit	Tons	Number and tons	Tons

In the framework of Task 2, the second Targeted product is a GIS mapof fishing effort impact or disturbance by fish trawlers. In order to produce this, we started to define the methodology to assess the available data coming from different sources (VMS, AIS, etc.). Specific requests of VMS maps have been sent to DCF national correspondent of the European countries using VMS data for fishery control. In particular, Slovenia and France already have provided the data requested. Other countries (Italy, Cyprus, Malta and Greece) have replied positively to the request, while Spain and Croatia have not yet given any feedback. An example of the VMS maps of trawling fleet is presented in figure 6.1. The analyses of VMS data has been conducted using VMSbase (Russo et al., 2012) The procedure is summarized below:

1. Edit Raw VMS data adding a Vessel identification number
2. Save raw data
3. Create Dbase
4. Clean data from erroneous pings and from data send from the harbour
5. Track cutting
6. Track interpolation using 10 minutes based ping time resolution.
7. Get isobaths.
8. Assign area
9. Assign bathimetry.
10. Check the data with Google viewer
11. Edit data Logbook.

12. Create a Logbook database
13. Metier classification defined only as OTB.
14. Logbook-VMS matching
15. Find fishing points defining speed limits (1.5 – 4 knots), depth limits (-5 - -800 m), distance from the harbour (1 km)
16. grid and mapping: use a grid of 5km and interpolation frequency of 10 minutes (5km shape files have been provided for each GSA)
17. Save as shape file.

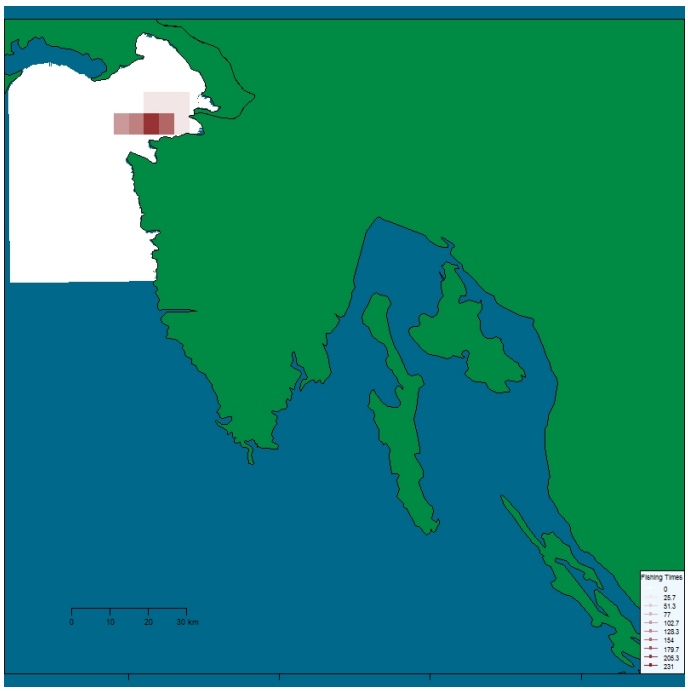


Figure 6.1 – Example of GIS targeted product for fishing effort by Slovenian trawlers. The colors indicate fishing hours in April 2012 and the colours are explained in the caption on the lower right corner of the image.

We have also looked to the opportunity to collect AIS datasets which may be useful either to map the fishing grounds of the Mediterranean non-EU countries and to make comparison with the VMS datasets for EU member states where possible (given the greater precision of AIS with respect to the VMS system).

7. WP7 Challenge 6: Marine Environment (OCEANS-CAT)

Challenge 6 – Marine Environment will collect, collate and assess relevant data sets in order to evaluate eutrophication in the Mediterranean Sea. During the third six months, challenge 6 has been focusing in three major tasks:
Identification of the challenge's final output;
Revision of the original data in order to be uploaded into "Sextant" GIS tool;
Reporting of the summary of lessons learned as input to the Data Adequacy report.
The final output of the Challenge is:
Maps and trends of nutrients from in situ data sets;
maps of Chl-a trends from satellite colour data;

For the in situ nutrient data, the UNEP MedPol database should be very important but it is not publically available. However, several discussions are being carried out to make them available through EMODNET. Complementarily we are looking for more data through the PERSEUS data base and the NOAA World Data Center. During this period, the following tasks were carried out regarding the in situ data:
Web access and downloading of nutrient data in ODV format from the following sources for the period 1930-2013:
NOAA-NODC WORLD OCEAN DATABASE 2013
PERSEUS
MEDAR/MEDATLAS II
EMODNET/SEADANET
Data processing:
Yearly time series
Monthly climate time series
Depth distribution
ODV data format was restricted to 250 cruises and not converted to standard units. This problem was solved by data downloading in mdb format, thus requiring building queries using ACCESS to import to ODV. Data conversion to standard units, when possible, was necessary while importing data to ODV.
At present state, depth data could not easily be interpolated because of missing standardized depth/pressure values. Available data split into four datasets while importing to ODV: (time series and CTD profiles with different formats). The solution was to import individual datasets to ODV with nitrate in μmol/l and μml/kg and keep time series from the Black Sea apart. Nonetheless, final available data were relatively scarce.
The new collection was compacted to remove repeated cruises/stations. As a result, a new merged dataset with all publicly available nutrient data for the Mediterranean Sea was created. In order to summarize the newly implemented data collection, data interpolation was performed by applying weighted-average gridding to existing data. The new merged and weighted-average dataset can be considered as a proxy of the best possible representation of available nutrients for the Mediterranean Sea. Data requiring negotiations with providers were not included in the present study.
Further request of restricted-access data will be essential to increase yearly/seasonal data representativeness. Though, significantly improvement of data representativeness may not be guaranteed.
Full conversion to a single standard unit and quality control filtering will improve the present newly implemented dataset collection.
A single public dataset containing all the available data merged together, somehow similar to the present one (once revisited and improved) is desirable. Links to data sources are not necessary as metadata will contain that info plus all the required information about the sources.
Meanwhile an updated version of the European Chlorophyll trend index (CSI-023-R) has been developed within MyOcean, which is based on regional OC datasets, that product is public available (since today) at: http://www.myocean.eu/web/105-specific-scientific-developments.php.

During the third semester we defined the Chlorophyll product designed to produce the CSI023-R regional indicator for eutrophication (i.e., trends of Chl concentration over the Mediterranean Sea). Challenge 6 will make use of MedOC4 (Volpe et al., 2007) algorithm over the ESA-CCI (Climate Change Initiative) input reprocessed ocean color data (RRS) at a nominal resolution of 4 km. ESA CCI RRS are produced by merging MERIS, MODIS Aqua and SeaWiFS observations, by applying

a series of state-of-the-art algorithms. The net result is a higher spatial coverage of the fully consistent time series of the three sensor products.
The first product is made of 2 maps, representing the mean of the Chlorophyll fields over the European seas, from 1 May 1998 to 30 September 2011, and the standard deviation relative to the summer Chl climatology mean.
The second product will contain a map of the CSI023-R indicator and it provides in each pixel the slope of the trend (unit is mg·m–3·y-1) with a significance greater than 70%. The trend is computed by pairing the Mann Kendall test and the Sens's method (Mann, 1945, Kendall, 1975, Sen, 1968) to the summer mean Chl values (May-September) from 1998 to 2011. Both products have a spatial resolution of 4 km × 4 km.

8. WP8 Challenge 7: River Inputs (HCMR)

The aim of the present document is to contribute to the overview of the activities carried out by the project in the period from the 4th December 2014 till the 3rd June 2015. During these six months, challenge 7 has been focusing in three major tasks:

1. Identification of the challenge's final output;
2. Revision of the original data in order to be uploaded into "Sextant" GIS tool;
3. Reporting of the summary of lessons learned as input to the Data Adequacy report.

WP 8 – Challenge 7 – River Inputs will provide an overview on the temporal and spatial variability of river fluxes in terms of freshwater, suspended mater, nitrogen and phosphorus in the Mediterranean Sea, as well as data on eels in the main rivers of the Mediterranean drainage basin. Following the project's guidelines, the final product for challenge 7 should contain:

(1) a set of excel spreadsheets for data produced as time-series for each parameter
(2) maps showing the rivers and river monitoring stations for each parameter
(3) confidence limits

To achieve that, a large baseline inventory of Challenge 7 characteristics were created and integrated with the available environmental information and socio-economic data available from the EU projects and other large databases (EIONET, GRDC, Emodnets, etc).
Challenge 7 went through a thorough assessment of the originally reported data and ended up with a new revised inventory. In this final inventory, a number of data sources were eliminated, since either they did not provide any time series data regarding the challenge characteristics, or they included only pure marine and not fresh water data.
Thus, the relevant information of the challenge target variables was finally gathered from: EMODNET Portals (EMODNET-Chemistry for nutrients, EMODNET-Physics and Biology for temperature and sediments), EIONET, Eurowaternet & Waterbase and WISE for nutrient parameters, GRDC, RivDis, MedHycos, CISL, Water System Analysis Group, HyMex, NAUSICAA, FRIEND, MARBEF, Coast Colour and Water Programme Directory for freshwater discharge, temperature and sediments and finally FAO also for sediments (World River Sediment Yields) and eels abundance.
Tables 8.1 and 8.2 partially describe the revised database for this challenge. Table 8.1 presents the characteristics, while table 8.2 the final data sources.

Table 8.1. Revised List of Challenge 7 characteristics.

Processing level of characteristics : A- Observation B- high level analyzed observational product C- Forecast/Hindcast D- Publication O- Other

Unique Identifier for characteristics	Environmental matrix where characteristics are specified	Characteristics description	Processing level of characteristics	Production mode : 1.delayed 2.real-time	Hierarchy data level : 1- dataset 2- collection of datasets 3- data source not found
1	Fresh Water	Nitrate concentration	A	1	2
2	Fresh Water	Nitrate concentration	A	1	2
3	Fresh Water	Nitrate concentration	A	1	2
4	Fresh Water	Nitrate concentration	A	1	2
5	Fresh Water	Phosphate concentration	A	1	2
6	Fresh Water	Phosphate concentration	A	1	2
7	Fresh Water	Phosphate concentration	A	1	2
8	Fresh Water	Phosphate concentration	A	1	2
9	Fresh Water	Nitrogen concentration	A	1	2
10	Fresh Water	Nitrogen concentration	A	1	2
11	Fresh Water	Nitrogen concentration	A	1	2
12	Fresh Water	Nitrogen concentration	A	1	2
13	Fresh Water	Phosphorus concentration	A	1	2
14	Fresh Water	Phosphorus concentration	A	1	2
15	Fresh Water	Phosphorus concentration	A	1	2
16	Fresh Water	Phosphorus concentration	A	1	2
17	Fresh Water	Fresh water discharge	A	1	2
18	Fresh Water	Fresh water discharge	A	1	2
19	Fresh Water	Fresh water discharge	A	1	2
20	Fresh Water	Fresh water discharge	A	1	2
21	Fresh Water	Fresh water discharge	A	1	2
22	Fresh Water	Fresh water discharge	A	1	2
23	Fresh Water	Fresh water discharge	A	1	2
24	Fresh Water	Fresh water	A	1	2

		discharge			
25	Fresh Water	Fresh water temperature	A	1	2
26	Fresh Water	Fresh water temperature	A	1	2
27	Fresh Water	Fresh water temperature	A	1	2
28	Fresh water	Sediment loads	A	1	2
29	Fresh water	Sediment loads	A	1	2
30	Fresh water	Sediment loads	A	1	2
31	Fresh water	Sediment loads	A	1	2
32	Fresh water	Sediment loads	A	1	2
33	Fresh water	Sediment loads	A	1	2
34	Fresh water	Sediment loads	A	1	2
35	Fresh water	Sediment loads	A	1	2
36	Fresh water	Sediment loads	A	1	2
37	Biota	Eels abundance	A	1	2

Table 8.2. Revised List of data sources for challenge 7

ID	Programme/Project name (C)	Data provider (M)	Data collection or data set name	Catalogue name	Identifier of the dataset in the catalogue (C)
1	European Environment Information and Observation Network	European Environment Agency	EIONET- River flow - Water base rivers	http://www.eea.europa.eu/data-and-maps/data/waterbase-rivers-9	NA
2	Eurowaternet and Waterbase	European Environment Agency	EUROWATERNET	NA	NA
3	The Water Information System for Europe	DG Environment, Joint Research Centre, Eurostat, European Environment Agency	WISE	NA	NA
4	European Marine Observation and Data Network – Chemistry	Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS), Division of Oceanography	EMODNET-chemistry	NA	NA
5	European Environment Information and Observation Network	European Environment Agency	EIONET- River flow - Water base rivers	http://www.eea.europa.eu/data-and-maps/data/waterbase-rivers-9	NA
6	Eurowaternet and Waterbase	European Environment Agency	EUROWATERNET	NA	NA
7	The Water Information System for Europe	DG Environment, Joint Research Centre, Eurostat, European Environment Agency	WISE	NA	NA
8	European Marine Observation and Data Network – Chemistry	Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS), Division of Oceanography	EMODNET-chemistry	NA	NA
9	European Environment Information and	European Environment Agency	EIONET- River flow - Water base rivers	http://www.eea.europa.eu/data	NA

	Observation Network			-and-maps/data/waterbase-rivers-9	
10	Eurowaternet and Waterbase	European Environment Agency	EUROWATERNET	NA	NA
11	The Water Information System for Europe	DG Environment, Joint Research Centre, Eurostat, European Environment Agency	WISE	NA	NA
12	European Marine Observation and Data Network – Chemistry	Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS), Division of Oceanography	EMODNET-chemistry	NA	NA
13	European Environment Information and Observation Network	European Environment Agency	EIONET- River flow - Water base rivers	http://www.eea.europa.eu/data-and-maps/data/waterbase-rivers-9	NA
14	Eurowaternet and Waterbase	European Environment Agency	EUROWATERNET	NA	NA
15	The Water Information System for Europe	DG Environment, Joint Research Centre, Eurostat, European Environment Agency	WISE	NA	NA
16	European Marine Observation and Data Network – Chemistry	Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS), Division of Oceanography	EMODNET-chemistry	NA	NA
17	Global Runoff Data Centre	Federal Institute of Hydrology (BfG)	GRDC	NA	NA
18	Global River Discharge	Complex Systems Research Center (CSRC), University of New Hampshire	RivDIS	NA	NA
19	Mediterranean Hydrological Cycle Observing System	Institute of Research for Development (IRD)	Med-Hycos	NA	NA
20	CISL Research Data Archive	Data Support Section of the Computational and Information Systems Laboratory at the National Center for Atmospheric Research	CISL Research Data Archive	NA	NA
21	Water Systems Analysis Group	University of New Hampshire	Water Systems Analysis Group (WSAG)	NA	NA
22	HYdrological cycle in Mediterranean EXperiment (HYMEX)	CNRM - National Center For Meteorological Research	HyMeX	NA	NA
23	NAvigating throUgh Satellite and In situ data over loCAl Areas	IFREMER / IDM/SISMER	NAUSICAA	NA	NA
24	Flow Regimes from International Experimental and Network Data (FRIEND)	UN	FRIEND	NA	NA
25	European Marine Observation and Data Network – Physics	European Global Ocean Observing System (EuroGOOS)	EMODNET-physics	NA	NA
26	Mediterranean Hydrological Cycle Observing System	Institute of Research for Development (IRD)	Med-Hycos	NA	NA

27	HYdrological cycle in Mediterranean EXperiment (HYMEX)	CNRM - National Center For Meteorological Research	HyMeX	NA	NA
28	Preparatory action for European Marine Observation and Data Network - Lot 1 – Biology	Flanders Marine Institute (VLIZ)	EMODNET-biology	NA	NA
29	European Marine Observation and Data Network - Physics	European Global Ocean Observing System (EuroGOOS)	EMODNET-physics	NA	NA
30	World River Sediment Yields Database	Food and Agriculture Organisation	World River Sediment Yields	NA	NA
31	Global Water Quality Data and Statistics	United Nations Environment Programme Global Environment Monitoring System (UNEP/GEMS)	Water Programme Directory	NA	NA
32	Marine Biodiversity and Ecosystem Functioning	Netherlands Institute of Ecology Centre for Estuarine and Marine Ecology (NIOO-CEME)	MARBEF	SDN EDMED	NA
33	CoastColour Project	European Space Agency	CoastColour	NA	NA
34	HYdrological cycle in Mediterranean EXperiment (HYMEX)	CNRM - National Center For Meteorological Research	HyMeX	NA	NA
35	NAvigating throUgh Satellite and In situ data over loCAl Areas	IFREMER / IDM/SISMER	NAUSICAA	NA	NA
36	Flow Regimes from International Experimental and Network Data (FRIEND)	International Sediment Initiative (ISI)	FRIEND	NA	NA
37	IA	Food and Agriculture Organization of the United Nations, Fisheries and Aquaculture Department	FAO capture and aquaculture database	NA	NA

After the completion of the consolidation the metadata were uploaded on the Sextant catalogue and edited. After the editing, the validation process followed. This time the "Reviewer" of the challenge had to:

1. Verify again that all information from the excel file has been well reported into Sextant Catalogue
2. Eventually take notes of possible "internal improvements" that could be done later
3. Make each validated metadata "public".

All metadata of challenge 7 succeeded the validation and they were published to be visible from the website.

9. WP9: Web site development (CLS)

The core activities were of 3 types:

1. Technical expertise
2. Development and setting up
3. the web portal service

I. Technical expertise

The technical expertise has covered three distinct issues:

1. The final clarification on checkpoint products (cf. figure 1) and targeted audiences and needs (cf. table 1) in order to better define what the Checkpoint is and what is not aiming at for them.
2. The process and workflow to define / validate / consolidate and revise the metadata base
3. The methodology to define and present indicators following the principles of "SMART" methodology (cf. table 2) and which resulting in the need to manage indicator fact sheets with their revision process.

The indicators built from descriptors in 3 stages (cf. figure 2), depending on the aggregation needs to synthesise the view and raise actions

- ✓ **Stage 1** gives a neutral and basic status directly computed from the raw checkpoint descriptors. (e.g. quality, bias, major limits, major advantages)
- ✓ **Stage 2** delivers a sectorial status, aggregating level 1 results for instance depending on processing level.
- ✓ **Stage 3** synthesizes and focus the indicator view at characteristic level for decision making and actions plan. They are computed upon stage 2 indicators.

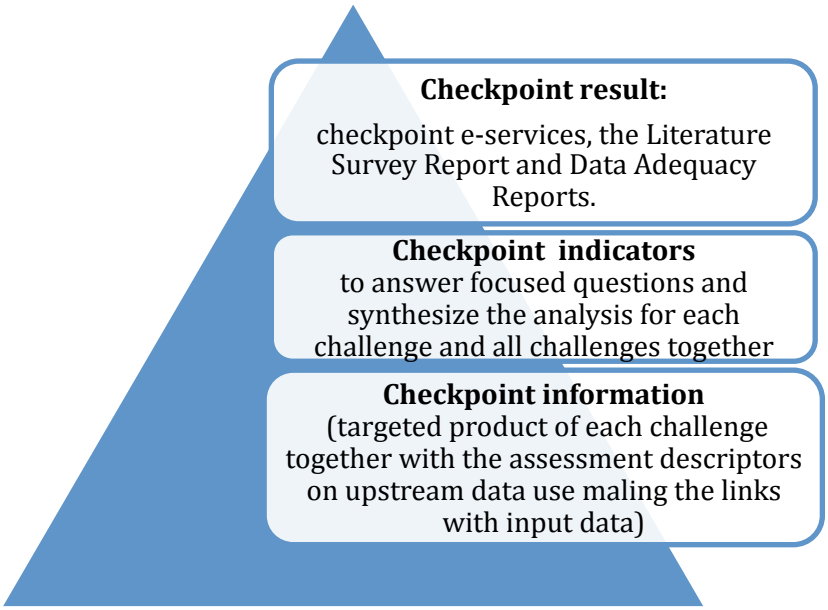


Figure 9.1: The 3 type of checkpoint products

II. Development and setting up

The development has covered:

- The feeding and adjustment of the checkpoint database with the consolidated metadata inputs and challenge and animation by project lead. The feeding relies on the Sextant GIS technology[1] to store the information on the upstream data sets and the targeted products for the Challenges, when they are available. A specific online form has been created into Sextant by implementing an excel sheet into ISO 19115 metadata schema. Ifremer has provided a major support in the first feeding of the tool, integrating template 2 of each challenge, that is 276 data sets altogether.
  Then, challenge have verified and completed, when necessary, the quality of their inputs. During this first metadata operations/consolidations phase, Sextant technical team and Literature Survey / DAR team has provided an important support to the GIS contact points. Work is ongoing to better harmonize and consolidate the information from the DAR feedback. Formation to technical partners is programmed to share workload and to challenges to propagate good practices.
- Not forgetting the full review of web site content and organisation to integrate the literature survey outcomes, three more web interfaces have been developed and implemented to present / discover / access the checkpoint descriptors (metadata base)and first stage indicators :
  - **CheckPoint Browser**
    A public access function to search and explore the input datasets and the Challenge products;
  - **CheckPoint GIS**
    A function under public and restricted access to visualize and manage CheckPoint input datasets and the Challenge products;
  - **CheckPoint Dashboard**
    A function under restricted access to compute and visualise indicators, directly built from metadatabase descriptors.

The development activity has been orchestrated for planning and pieces engineering by CLS , for technical interoperability of tools by Ifremer, plus a semi-external validation performed by SOCIB.

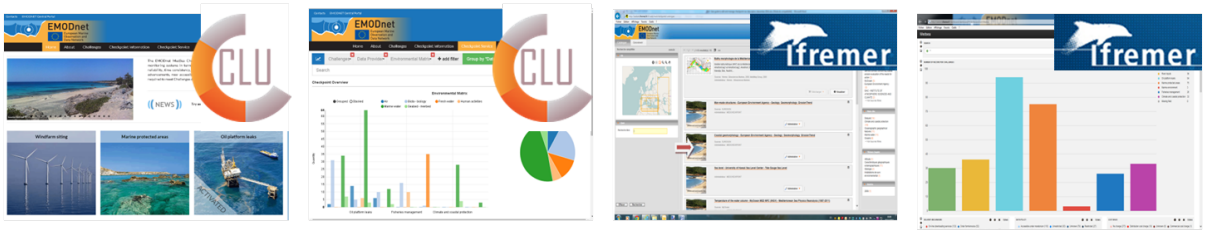


Figure 9.2: The 4 web interfaces of MedSea checkpoint and team responsible of their development

III. The web portal service

The current infrastructure has deployed several functional services required for targeted audience (Table 9.3)

Checkpoint service	Needs	E-Service
E-function 1	To explain principles and be a showcase of all project activities	• Revision of texts and better embedded web solutions

[1] Sextant provides access to various geographical data via web services using standards defined by the Open Geospatial Consortium (OGC) and the ISO Technical Committee ISO/TC 211, Geographic information /Geomatics. Sextant uses Geonetwork to set up the Catalogue Services for the Web and is used by several EU projects such as EMODnet, MyOcean, GeoSeas.

E-function 2	To show cases of upstream uses	• Clarify the observation and user landscape • Allow to browse data sources to link challenge to input data (and vice versa) pointing out to the existing programs, national and international, roles and synergies
E-function 3	To depict fitness for purpose /use	• Allow to browse key checkpoint characteristics or statistics
E-function 4	To discover upstream data	• Understand availability indicator • Identify availability status challenge by challenge or all together *(though environmental characteristics, responsiveness, cost basis, data policy, delivery mechanisms)*
E-function 5	To manage continuously checkpoint information	• Towards a catalogue of automated and easy to read indicators

Table 9.3: The 5 front-end functions of MedSea checkpoint

The project information has been completely revised to take into account the Literature Survey outcomes, a better presentation of the policy framework audience , the visibility/use of checkpoints products, descriptors and indicators, the articulation of web tools for a better embedded solution with the Central Emodnet Portal and DG MARE forum.
The service back up functions covered:

1) Operations and maintenance
2) Monitoring
3) Change management and continuous process improvements

The CMS web site is regularly upgraded for updates and ameliorations on a 3-monthly basis (CLU, CLS, INGV). News and project outputs are published as soon as they are available (at least on a 3 month basis). All the updates are recorded into the CMS and in MS documents (versioning). 7 GIS contact points or checkpoint referents, plus a DAR referent, have been identified during last annual meeting to smooth transition and operational activities:

Challenge #	Challenge title	Person in charge	E-mail
1	Wind farm sitting	George Galanis	gngalanis@gmail.com
2	Marine protected areas	Hara Kyriakidou	hkyriakid@hcmr.gr
3	Oil platform leak	Michela De Dominicis	diego.bruciaferri@ingv.it
4	Climate and coastal protection	Lluís Gómez-Pujol	lgomez-pujol@uib.cat
5	Fishery management	Giuseppe Scarcella	giuseppe.scarcella@an.ismar.cnr.it
6	Marine environment	Antonio Cruzado	acruzado@oceans.cat
7	River inputs	Federico Falcini	Federico.Falcini@artov.isac.cnr.it

A user guide to collect and manage checkpoint raw descriptors (D9.4) has been edited and is available online in the Sextant interface. Targeted to data managers, editors, content reviewers and administrators of checkpoint raw descriptors, it lists the tasks to be conducted and explains the enabling tools used to perform them. Every 6 months, each challenge is welcome to update their classification of input data sets and targeted products.

10. WP10: Organization of Panels (INGV)

During the month of January 2015 INGV started the organization of the First Panel meeting setting up a Doodle for the choice of the dates that could guarantee the participation of all the Experts and EU representatives, partners and stakeholders.
The suitable dates for the two days meeting were agreed being 8th-9th April 2015 in Brussels at EUROGoos (European Global Ocean Observing System) headquartes, given the long term collaboration of INGV with this Organization.
The panel experts' on INGV side were: Mr Jan Eric Hanssen, Mr Alberto Lamberti, Mr Piero Lionello, Ms Monika Peterlin. Mr Miguel Bernal, due to an an univoidable commitment, could only participate through written comments.
On DG MARE side, Dr PierFrancesco Moretti was inserted as the EU expert. Logistic arrangements for the experts (travel, accomodation, per diems) were provided and guaranteed.
Meanwhile the Agenda was set up: the objective of the meeting was the presentation and analysis/review of the 1st Data Adequacy Report.
More in specific the work has been organized as follows:

- the first day (8th april 2015) INGV together with WP leaders presented the project and the Data Adequacy Report to the Panel Experts and to the external stakeholders. It was also given an introduction to Checkpoint metadata and indicators and a demonstration of Checkpoint Service. Discussion and questions concluded the first day.
- the second day (9th april 2015) the work session was at closed doors with Panel experts', project partners and the Commission. In order to get to a more efficient and effective result of the meeting, the Coordinator had prepared and distributed a Template with questions to be answered in order to make a consistent First Draft Report. The scheme was presented and discussed. Through this methodology it was possible to write the Preliminary Report by the experts and have a final discussion on the roadmap to a final 1st DAR. The document was then finalized as foreseen in the project timetable.

The Panel Report is made available at the Project Web site : http://www.emodnet-mediterranean.eu/reports_news/.

11. WP11: Data adequacy reports (INGV)

The third semester has seen the development and the production of the first Data Adequacy Report. This has been based on three main pillars:

1. The Literature Revue (WP1), that is providing the basic information on data requirements for the challenges and the main tools for a fitness for use assessment

2. The information from Challenges (WP2-WP8) regarding the availability and appropriateness of input data sets for the targeted products;

3. The compilation of the MedCheckPoint metadatabase and checkpoint information, managing the information on availability and appropriateness and providing also indicators for the fitness for use.

In the DAR, **Adequacy** has been intended as ‘sufficient to satisfy a requirement or meet a user need (not a producer one)’. From this definition, ‘adequacy’ relates to meeting both requirements as

well as needs. The general ISO framework adopted in the DAR is schematised in Fig. 11.1 and it contains the so-called '**Universe of Discourse**' defined as a 'view of the real or hypothetical world that includes everything of interest' (ISO 19101).

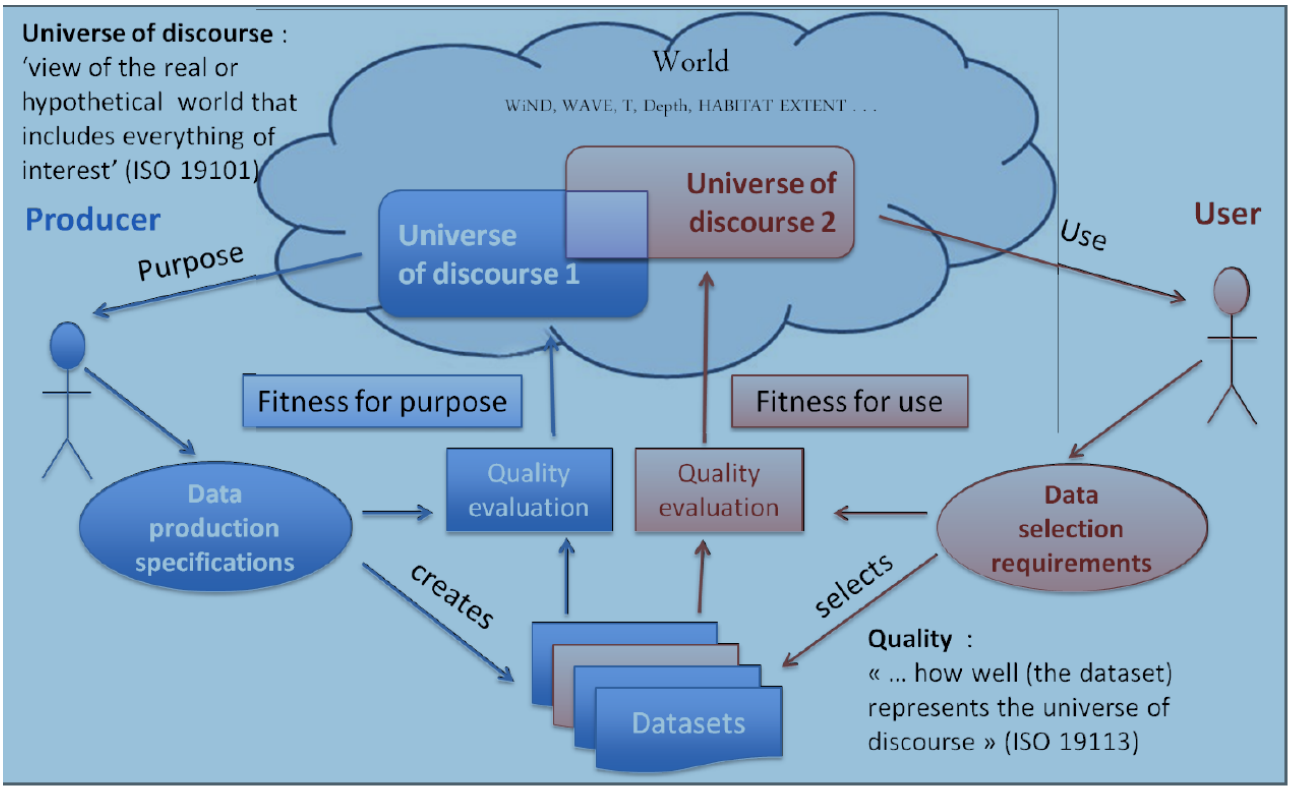


Fig. 11.1 The Firtness for use and fitness for purpose concepts

On the basis of the CheckPoint metadatabase, it was confirmed that **45 categories of characteristics** (specifically defined class of variables derived from observations or models and/or the geographical representation of an object) are needed for the seven Challenges and **126 data providers** (primary provider = originator; secondary provider = distributor and/or curator) would be required by the Challenges in order to develop the targeted products. This already highlights the importance of the MedSea CheckPoint portal for collecting and organizing the information on complex and distributed data source networks that are required to derive the Challenge products.

The assessment criteria have been subdivided into two territories: appropriateness and availability. **Only availability is described in the first DAR** since most of the Challenge products have not yet been developed and thus appropriateness cannot be defined properly. The availability investigates "**how the input data sets are made available to the Challenge use**" and **8 indicators** have been developed from the metadatabase.

The Literature Survey provided the initial list of characteristic categories and data set descriptors that have been included in the CheckPoint metadatabase contained in an e-infrastructure based on the Catalog Services for Web (CSW) framework.
The CheckPoint metadatabase contains the metadata that link the selected datasets to the different providers. In order to classify the data sets and providers, the Sextant data catalogue uses the SeaDataNet Common Vocabularies (http://www.seadatanet.org/), the European Directory of Marine Organisations (EDMO) and the European Directory of Marine Environmental Research Projects (EDMERP).

From this first analysis and without differentiating between the Challenges, only four indicators were assessed from which the following emerged:
1) the majority of the data sets are accessible through an online delivery service (not always fully Inspire compliant),
2) the data policy is partially restricted;
3) most of the data are free of charge, and
4) the responsiveness in terms of data acquisition is generally high.

12. WP12: Project management (INGV)

Project management continued uninterruptedly during the third six months of the project.
Several Webex meetings were held in January-February 2015 for the metadata consolidation and verification.
EMODnet coordinator and manager participated to the 2nd EMODnet-MSFD Coordination Meeting held in Bruxelles, 27 February 2015.
EMODnet scientific coordinator and manager participated to the Maritime Days and presented the project results on May 28, 2015 at the session: “Marine data and information powering Blue Growth”.

Annex 1 : Official call for aggregated data

EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR MARITIME AFFAIRS AND FISHERIES

MEDITERRANEAN AND BLACK SEA

Brussels,
MARE/D2/NM (2015)

TO THE DATA COLLECTION NATIONAL CORRESPONDENTS OF CROATIA, CYPRUS, FRANCE, GREECE, ITALY, MALTA, SLOVENIA, SPAIN

Subject: **Official call for aggregated data to assist the Technical Tender "Growth and Innovation in Ocean Economy – Gaps and Priorities in sea basin observation and data. Lot-2: The Mediterranean" (No. MARE/2012/11)**

Dear Madam, Dear Sir,

Following our previous communication on 6 February 2015 with reference number Ares(2015)500027, the European Commission herewith asks Member States to provide additional aggregated data on all species including by-catch for mammals, reptiles and seabirds.

The Technical Tender "Growth and Innovation in Ocean Economy – Gaps and Priorities in sea basin observation and data. Lot-2: The Mediterranean" (No. MARE/2012/11) aims at setting up an EMODnet Portal (so-called EMODnet Med-Sea-checkpoint) that will serve to quality assess, extract the synergies between, and identify the gaps of the present monitoring data sets for the entire Mediterranean Sea.

The following seven tasks or 'challenges' are chosen to test how comprehensive and accurate the monitoring and forecasting data are at the Mediterranean scale:

1. Wind farm siting
2. Marine Protected areas
3. Oil Platforms leak
4. Climate and Coastal protection
5. Fisheries Management
6. Marine Environment
7. River inputs.

In the framework Fisheries Management, specific "challenge products" need to be objectively assessed in term of appropriateness and availability of the existing monitoring system at the sea basin level. Moreover, gaps should be identified and needs should be prioritize in order to optimize the system throughout the value chain (i.e. data collection, data management and networking) and release recommendations for future developments to better meet the application requirements. As requested in the tender specifications, "Fisheries Management challenge products" are fisheries data before and after the Data Collection Regulation came into force from the different Mediterranean countries. The time-series should be as long as possible and should differentiate between species.

Commission européenne/Europese Commissie, 1049 Bruxelles/Brussel, BELGIQUE/BELGIË - Tel. +32 22991111

Data request

The numbers and the mass of all species as set up in the following format

Country	Year	Species (scientific name)	Number of specimens landed	Tons landed	Number of specimens discarded (by-catch for mammals reptiles and seabirds)	Ton discarded (by-catch for mammals, reptiles and seabirds)

In accordance with Commission Decision of 18 December 2009 (2010/93/EU), the time period should start from 2002 (for Croatia should start from 2013) till present and the species should include the species listed under Appendix VII for the Mediterranean Sea of the aforementioned decision. Member States are requested to submit on a voluntary basis the above data regarding years earlier than 2002.

Information on additional species not listed under Appendix VII of Commission Decision of 18 December 2009 (2010/93/EU) and on by-catch for mammals, reptiles and seabirds, should be submitted on a voluntary basis with a time-series as long as possible.

In line with Article 20.2 of Regulation (EC) No 199/2008, these data shall reach the European Commission within **one month from the receipt of this request for data**.

These data shall be sent by email to Mr. Iain Shepherd (Iain.SHEPHERD@ec.europa.eu) from DG MARE and to Project Coordinator Dr. Nadia Pinardi (email: n.pinardi@sincem.unibo.it).

For further clarifications and guidance you may contact Dr. Nadia Pinardi (email: n.pinardi@sincem.unibo.it).

We look forward to your cooperation.

Yours sincerely,

Hubert GAMBS
Director

Cc: *Permanent representation of Croatia, Cyprus, France, Greece, Italy, Malta, Slovenia, Spain in EU*

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