



Review of the Black Sea Checkpoint Products

Atanas Palazov

What – By Who ?



This challenge handles the ability **to determine the suitability of sites for offshore wind farm development** in Black Sea, **to assess whether the current available marine datasets are available and appropriate to the use case**, as well as **to indicate gaps in the current EU data collection framework**.

- **National and Kapodistrian University of Athens, NKUA, Greece**
- Institute of Oceanology, Bulgarian Academy of Sciences, IO-BAS, Bulgaria
- National Institute for Marine Research and Development “Grigore Antipa”, NIMRD, Romania
- Sofia University “St. Kliment Ohridski”, USOF, Bulgaria

List of products

Nb products	Nb formats SIG	Nb Excel	Nb Other (pdf, txt, img)
3	3	0	2

Name of product / component	Short & Descriptive Title	Format	Units
BLACKSEA_CH01_product_1	Black Sea Wind/Wave data base (2001-2010)	SQLdatabase Available on request	unitless five- grade index
BLACKSEA_CH01_product_2	Assessment of the available database through a detailed statistical analysis Suitability map for offshore windfarm siting in BlackSea, where -PC1-waters of Bulgaria and Romania -PC2-waters of Turkey and Bulgaria meet -PC3- waters of Turkey and Georgia meet	Report & GIS compatibles	unitless five- grade index
BLACKSEA_CH01_product_3	Assessment of the confidence limits of the data sets for the test regions	Report & GIS compatibles	unitless five- grade index

Upstream data identified in Sextant

env. matrix	Characteristics (P02)	Sources (data provider)	input datasets	Air	Biota/Biology	Ice	Fresh Water	Marine Water	Riverbed /Seabed	Human activities
2	11	7	44	11	None			32		None

What – By Who ?



This challenge handles the ability **to analyze the existing network of Marine Protected Areas with respect to fishery activities & climate change impact**, determine whether the network constitutes a representative and coherent network as described in article 13 of the Marine Strategy Framework Directive, and determine how MPAs are likely to be affected by Climate Change, **to assess whether the current available marine datasets are available and appropriate to the use case, as well as to indicate gaps in the current EU data collection framework.**

- **Institute of Oceanology, Bulgarian Academy of Sciences, IO-BAS, Bulgaria**
- National Institute for Marine Research and Development “Grigore Antipa”, NIMRD, Romania
- Euro-Mediterranean Center for Climate Change, CMCC, Italy
- ORION – Joint Research and Development Centre, ORION, Cyprus
- Ukrainian Scientific Centre of Ecology of the Sea, UkrSCES, Ukraine
- Ivane Javakhishvili Tbilisi State University, TSU, Georgia
- Institute of Marine Sciences, Middle East Technical University, IMS, Turkey
- P.P. Shirshov Institute of Oceanology, Russian Academy of Sciences, SIO-RAS, Russia
- SC Marine Research Srl, SCMR, Romania

List of products

Nb products	Nb formats SIG	Nb Excel	Nb Other (pdf, txt,img)
4	4	0	0

Name of product / component	Short & Descriptive Title	Format	Units
BLACKSEA_CH02_product_1 PC1- Ecoregions PC2: MPAs in Georgia PC3- International Protected Sites PC4-Zoning PC5- National protected Sites PC6- Natura 2000 sites	Black Sea network of marine protected areas: list, position and boundaries (IUCN classification) (including size and shape of each MPA and spacing between each other)	Shapefile: 6 layers	None
BLACKSEA_CH02_product_2 PC1 - Romania PC2 – Bulgaria	Black Sea network of marine protected areas: Habitat types and mapping for Bulgaria & Romania	Shapefile: 2 layers	None
BLACKSEA_CH02_product_3 PC1- Marine mammals (cetacean observations) PC2- Fish (species occurrence) PC3- Seabirds (bird observations)	Black Sea network of marine protected areas: Biodiversity	Shapefile: 3 layers	None
BLACKSEA_CH02_product_4 PC1- Jun-Aug [2005-2015) PC2-Sept-Nov [2005-2015) or 12 monthly means	Qualitative analysis of connectivity between MPAs: seasonal maps of surface temperature [deg C] and surface currents [m/s]	Shapefile: 4 layers	deg C m/s

Upstream data identified in Sextant

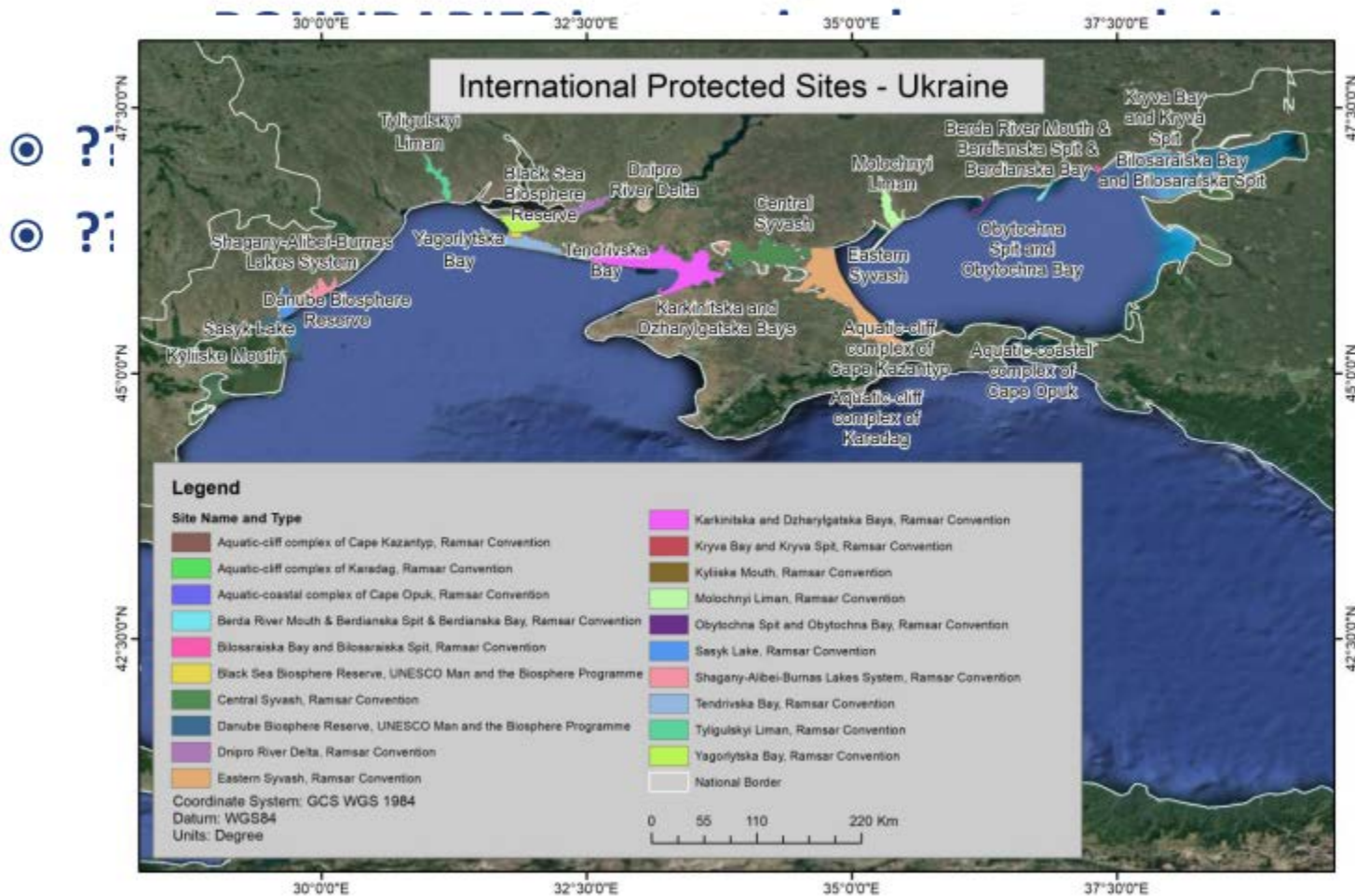
env. matrix	Characteristics (P02)	Sources (data provider)	Input datasets	Air	Biota/Biology	Ice	Fresh Water	Marine Water	Riverbed /Seabed	Human activities
4	12	17	41		17			21	2	1



Example

BLACKSEA_CH_2_Pro

network of marine protected areas



What – By Who ?



This challenge handles the ability **to monitor any oil spill over the Black Sea and the statistical likelihood that sensitive coastal habitats or species or tourist beaches will be affected** within 24, 48 and 72 hours after the accident, **to assess whether the current available marine datasets are available and appropriate to the use case, as well as to indicate gaps in the current EU data collection framework.**

- **ORION Joint Research and Development Centre. ORION, Cyprus**
- Euro-Mediterranean Centre of Climate Change, CMCC, Italy
- Institute of oceanology, Bulgarian Academy of Sciences, IO-BAS, Bulgaria
- National and Kapodistrian University of Athens, NKUA, Greece

List of products

Nb products	Nb formats SIG	Nb Excel	Nb Other (pdf, txt, img)
2	0	0	2

Name of product / component	Short & Descriptive Title	Format	Units
BLACKSEA_CH03_product_1 incident declared on 10th May 2016 by DG MARE	Oil Platform Leak Bulletin released on 11 May 2016, fast release, 24h after the incident with information on <ul style="list-style-type: none"> · Bathymetry, Seabed substrate · Surface, subsurface and coastal oil spill concentrations; · Wind, current and wave . · Predicted impact on the coastal environment, seabed habitats and human activities; · Comparison between different oil spill models and meteo-oceanographic data set simulations. 	Pdf No shapefile	None
BLACKSEA_CH03_product_2	Oil Platform Leak Bulletin released on 13 May 2016, 72h after the incident with update of above information	Pdf No shapefile	None

Upstream data identified in Sextant

env. matrix	Characteristics (P02)	Sources (data provider)	input datasets	Air	Biota/Biology	Ice	Fresh Water	Marine Water	Riverbed /Seabed	Human activities
5	9	12	19	4	1			9	4	1



What – By Who ?



This challenge aims to compute the **change of key ocean characteristics over past 10 to 100 years, temperature, internal energy, ice coverage and phytoplankton abundance (top three species), to assess whether the current available marine datasets are available and appropriate to the use case, as well as to indicate gaps in the current EU data collection framework.**

- **Sofia University St. Kliment Ohridski, USOF, Bulgaria**
- Institute of oceanology, Bulgarian Academy of Sciences, IO-BAS, Bulgaria
- National Institute of Marine Research and Development “Grigor Antipa”, NIMRD, Romania
- Euro-Mediterranean Centre of Climate Change, CMCC, Italy
- University of Plymouth, UPL, United Kingdom
- P.P. Shirshov Institute of Oceanology, Russian Academy of Sciences, SIO-RAS, Russia

List of products

Nb products	Nb formats SIG	Nb Excel	Nb Other (pdf, txt, img)
18	12	6	0

Name of product / component	Short & Descriptive Title	Format	Units
BLACKSEA_CH04_product_1	Map of the change of the annual mean temperature • At surface • Over 10 years	Shapefile	degrees Celcius / decade
BLACKSEA_CH04_product_2	Map of the change of the annual mean temperature • At mid water column (500 m) • Over 10 years	Shapefile	degrees Celcius / decade
BLACKSEA_CH04_product_3	Map of the change of the annual mean temperature • At sea bottom • Over 10 years	Shapefile	degrees Celcius / decade
BLACKSEA_CH04_product_4	Map of the change of the annual mean temperature • At surface • Over 50 years	Shapefile	degrees Celcius / decade
BLACKSEA_CH04_product_5	Map of the change of the annual mean temperature • At mid water column (500 m) • Over 50 years:	Shapefile	degrees Celcius / decade
BLACKSEA_CH04_product_6	Map of the change of the annual mean temperature • At sea bottom • Over 50 years	Shapefile	degrees Celcius / decade

List of products

Nb products	Nb formats SIG	Nb Excel	Nb Other (pdf, txt, img)
18	12	6	0

Name of product / component	Short & Descriptive Title	Format	Units
BLACKSEA_CH04_product_7	Map of the change of the annual mean temperature At surface Over 100 years	Shapefile	degrees Celcius /decade
BLACKSEA_CH04_product_8	Map of the change of the annual mean temperature At mid water column (500 m) Over 100 years	Shapefile	degrees Celcius /decade
BLACKSEA_CH04_product_9	Map of the change of the annual mean temperature At sea bottom Over 100 years	Shapefile	degrees Celcius /decade
BLACKSEA_CH04_product_10	Map of the average extent of sea ice coverage Over 10 years	Shapefile	None
BLACKSEA_CH04_product_11	Map of the average extent of sea ice coverage Over 50 years	Shapefile	None
BLACKSEA_CH04_product_12	Map of the average extent of sea ice coverage Over 100 years	Shapefile	None

List of products

Nb products	Nb formats SIG	Nb Excel	Nb Other (pdf, txt, img)
18	12	6	0

Name of product / component	Short & Descriptive Title	Format	Units
BLACKSEA_CH04_product_13	Time series of annual mean temperature · At surface	Excel (time plots)	degrees Celcius/decade (1° resolution)
BLACKSEA_CH04_product_14	Time series of annual mean temperature · At mid water column (500 m)	Excel (time plots)	degrees Celcius/decade (1° resolution)
BLACKSEA_CH04_product_15	Time series of annual mean temperature · At sea bottom	Excel (time plots)	degrees Celcius/decade (1° resolution)
BLACKSEA_CH04_product_16	Time series of average annual internal energy	Excel (time plots)	°C.m, J
BLACKSEA_CH04_product_17	Time series of total ice cover in sea over past 100 years	Excel (time plots)	m2
BLACKSEA_CH04_product_18	Time series of abundance of three most abundant species of phytoplankton	Excel (time plots)	Abundance - cell/L

Upstream data identified in Sextant

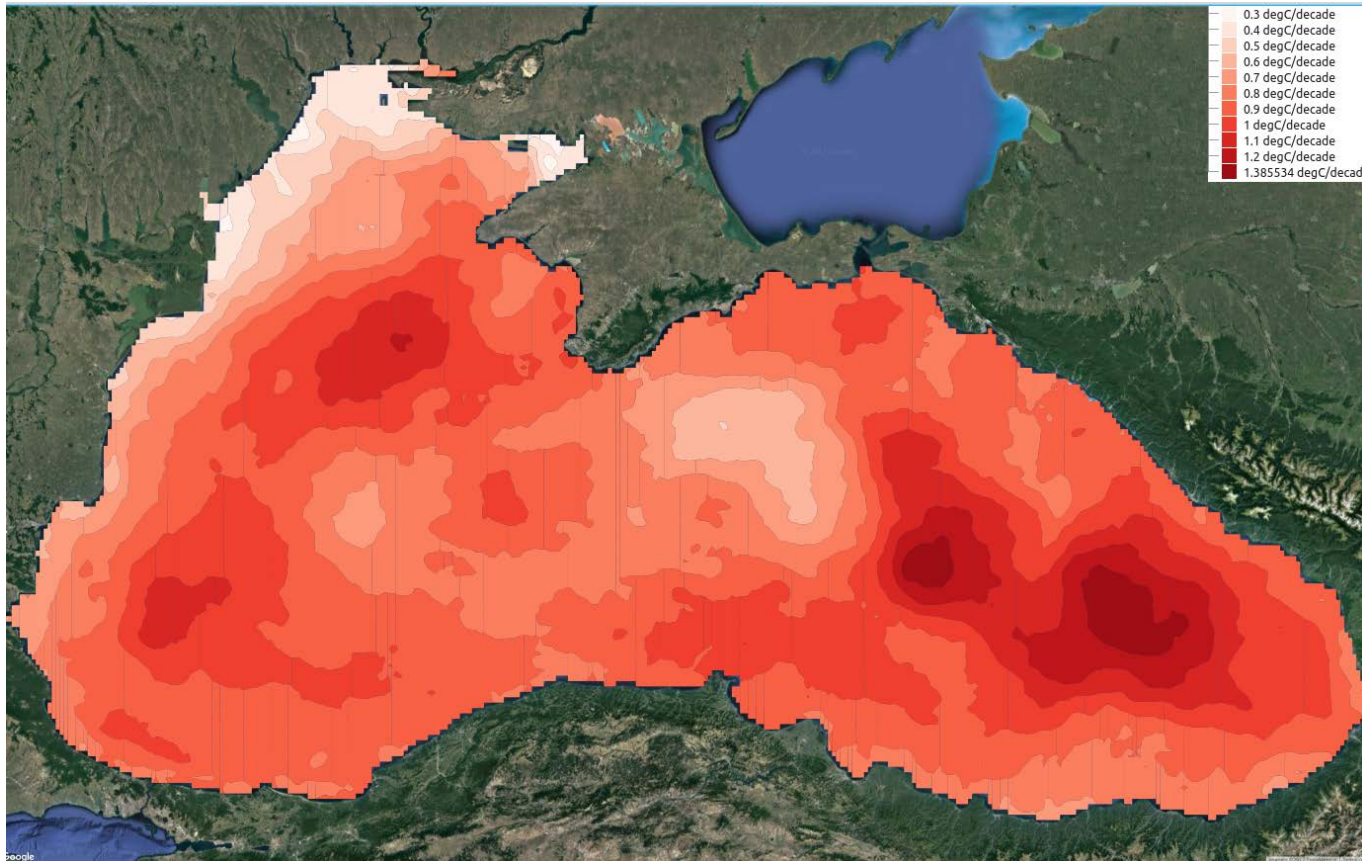
env. matrix	Characteristics (P02)	Sources (data provider)	input datasets	Air	Biota/Biology	Ice	Fresh Water	Marine Water	Riverbed /Seabed	Human activities
2=> 3	5	45	121		9	??		107		



Example

BLACKSEA_CH4_Product_1

Map of the change of the average temperature at surface over 10 years



What – By Who ?



This challenge handles the ability to follow up on the **sea-level rise and sediment balance per stretch of coast** of the BlackSea, **over past 10, 50 and 100 years**, to assess whether the current available marine datasets are available and appropriate to the use case, as well as to indicate gaps in the current EU data collection framework.

- **University of Plymouth, UPL, United Kingdom**
- Institute of Oceanology, Bulgarian Academy of Sciences, IO-BAS, Bulgaria
- Sofia University St. Kliment Ohridski, USOF, Bulgaria
- Ukrainian Scientific Centre of Ecology of the Sea, UkrSCES, Ukraine

List of products

Nb products	Nb formats SIG	Nb Excel	Nb Other (pdf, txt,img)
10	4	7	0

Name of product / component	Short & Descriptive Title	Format	Units
BLACKSEA_CH05_product_1 BLACKSEA_CH05_product_2	Sea level rise from altimetry and trend for the last 10 years (2006-2015) C1: Maps C2. tables C3 ? Nuts 3	Shapefile Excel file + Images	mm/year
BLACKSEA_CH05_product_3	Tables of regional sea level time-series and trend for the past 50 years (1966-2015), in selected coastal stations (Sevastopol, Poti, Tuapse, Costanza, Burgas and Varna).	Excel file + Images	
BLACKSEA_CH05_product_4	Tables of regional sea level time-series and trend for the past 100 years (1916-2015), in selected coastal stations (Sevastopol, Poti, Tuapse, Costanza, Burgas and Varna).	Excel file + Images	
BLACKSEA_CH05_product_5	Tables of time series and sea-level trend for the past 10 years (2006-2015) for 4 NUTS3 in Turkey. (from TUDES & PSMSL datasets)	Excel file + Images	
BLACKSEA_CH05_product_6	Tables of time series and sea-level trend for the past 50 years (1966-2015), for each NUTS3 from selected coastal stations (Sevastopol, Poti, Tuapse, Costanza, Burgas and Varna).	Excel file + Images	
BLACKSEA_CH05_product_7	Tables of time series and sea-level trend for the past 100 years (1916-2015), for each NUTS3 from selected coastal stations (Sevastopol, Poti, Tuapse, Costanza, Burgas and Varna).	Excel file + Images	

List of products

Nb products	Nb formats SIG	Nb Excel	Nb Other (pdf, txt, img)
10	4	7	0

Name of product / component	Short & Descriptive Title	Format	Units
BLACKSEA_CH05_product_8	Maps of sediment mass balance trend for the last 10 years (2006-2015) cover Adjara & Poti regions (Georgia)	Shapefile	m3/year
BLACKSEA_CH05_product_9	Maps of sediment mass balance trend for the last 50 years (1966-2015). cover Adjara & Poti regions (Georgia)	Shapefile	m3/year
BLACKSEA_CH05_product_10	Maps of sediment mass balance trend for the last 100 years (1916-2015).	Shapefile	m3/year

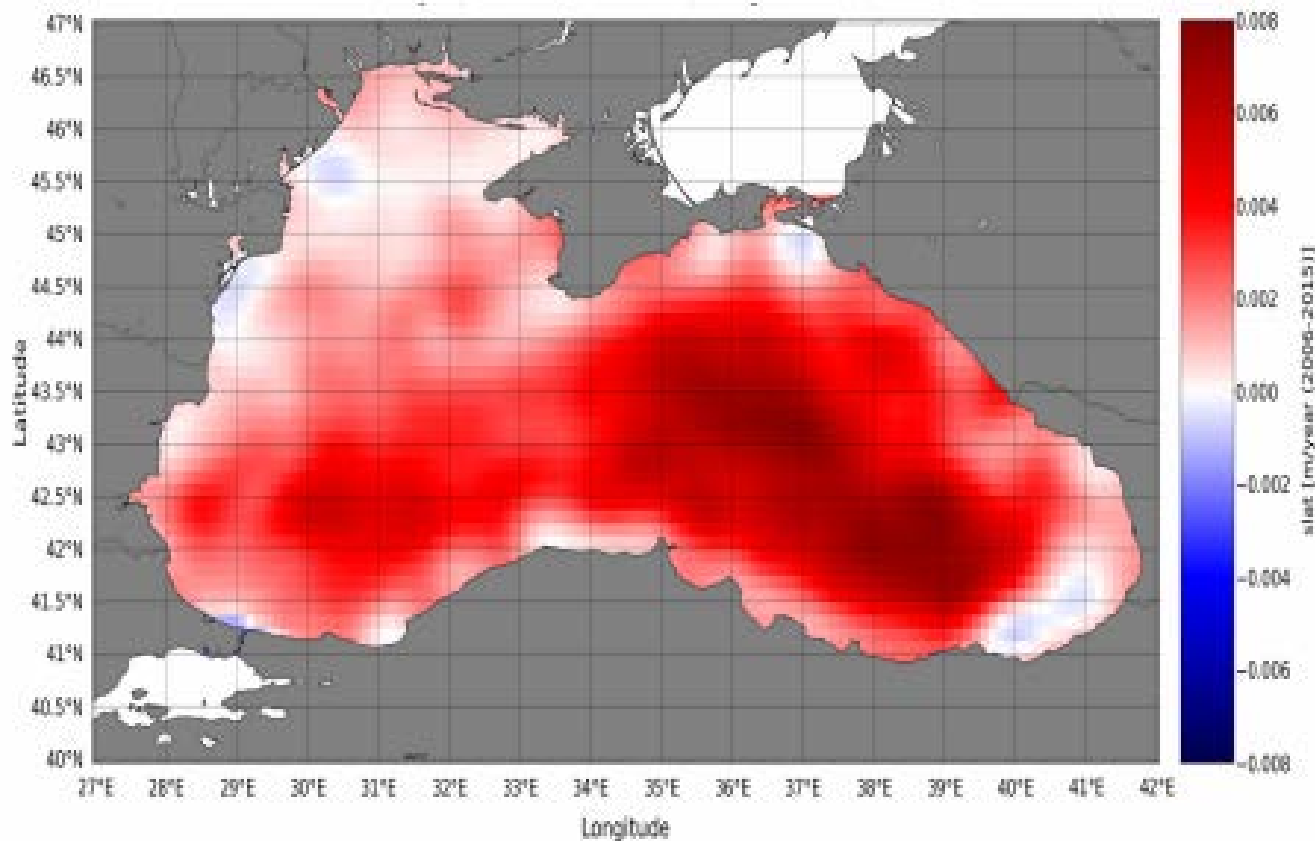
Upstream data identified in Sextant

env. matrix	Characteristics (P02)	Sources (data provider)	input datasets	Air	Biota/Biology	Ice	Fresh Water	Marine Water	Riverbed /Seabed	Human activities
3	3	10	46				2	42	2	

Example

BLACKSEA_CH05_product_1

Sea level rise from altimetry and trend for the last 10 years (2006-2015)



What – By Who ?



This challenge aims to collect fish catch information for the whole sea basin on **landings, discards, and by-catch of fish, mammals, reptiles and seabirds** (mass & number by species and year), **to assess whether the current available marine datasets are available and appropriate to the use case, as well as to indicate gaps in the current EU data collection framework.**

- **National Institute of Marine Research and Development “Grigore Antipa”, NIMRD, Romania**
- Institute of oceanology, Bulgarian Academy of Sciences, IO-BAS, Bulgaria
- Ivane Javakhishvili Tbilisi State University, TSU, Georgia
- Institute of Marine Sciences, Middle East Technical University, IMS, Turkey
- P.P. Shirshov Institute of Oceanology, Russian Academy of Sciences, SIO-RAS, Russia

List of products

Nb products	Nb formats SIG	Nb Excel	Nb Other (pdf, txt,img)
3	0	7	0

Name of product / component	Short & Descriptive Title	Format	Units
BLACKSEA_CH06_product_1	a collated data set of landings , fish & shellfish, by species and year - Mass for whole BLACK SEA 2008-2014 - Mass for Romania 2010-2016 PC3: Number for Romania 2010-2016 PC4: Mass for Bulgaria 2009-2015	4 Excel files No GIS inputs	mass in kg + number
BLACKSEA_CH06_product_2	a collated data set of discards , by species and year PC1: Mass for Romania 2010-2016 PC2: Number for Romania 2010-2016	2 Excel files No GIS inputs	mass in kg + number
BLACKSEA_CH06_product_3	a collated data set of by-catch , by species and year PC1: Mass for Romania 2009-2016	1 Excel file No GIS inputs	mass in kg + number

Upstream data identified in Sextant

env. matrix	Characteristics (P02)	Sources (data provider)	input datasets	Air	Biota/Biology	Ice	Fresh Water	Marine Water	Riverbed /Seabed	Human activities
1	2	3	3				0	3	0	

Example

BLACKSEA_CHECKPOINT

. Collated data set of LANDINGS by species MASS BULGARIA 2009-2015

Year	Species	Species - CODE	Total catch [
2009	Big-scale sand smelt	SIL	13549
2009	Red mullet	MUR	23969
2009	Garfish	GAR	5481.5
2009	Leaping mullet	LZS	6874.1
2009	Turbot	TUR	52074.45
2009	Pontic shad	SHC	37147.7
2009	So-iuy mullet	MYZ	2303
2009	European seabass	BSS	40
2009	Bluefish	BLU	52344.5
2009	Common stingray	JDP	2176.3
2009	Thornback ray	RJC	46754.8
2009	Angler	ANF	150
2009	Sand sole	SOL	103.5
2009	Flathead grey mullet	MUF	10619.95
2009	Shrimps		308.3
2009	Bonito	BON	4807.9
2009	European flounder	FLE	74
2009	Golden grey mullet	MGA	3303
2009	Gobies	GPA	36750.8
2009	Sand shrimp	CSH	116.3
2009	Rapa whelk	RPN	2212552.3
2009	European pilchard	PIL	3482
2009	Horse mackerel	HMM	176880.7
2009	Picarel	PIC	151
2009	Anchovy	ANE	42379
2009	Sprat	SPR	4535923
2009	Blue mussel	MSM	45490
2009	Red mullet	MUT	48193.5
2009	Spiny dogfish	DGS	9454
2009	Mackerel	MAC	85
2009	Whiting	WHG	2273
2010	Big-scale sand smelt	SIL	26968
2010	Red mullet	MUR	38248.85
2010	White clams	CLS	20
2010	Garfish	GAR	3788.5

What – By Who ?



This challenge aims to produce map layers showing the **extent of the fisheries impact, trawlers, on the sea floor** (gridded data), **to assess whether the current available marine datasets are available and appropriate to the use case, as well as to indicate gaps in the current EU data collection framework.**

- **National Institute of Marine Research and Development “Grigore Antipa”, NIMRD, Romania**
- Institute of Marine Sciences, Middle East Technical University, IMS, Turkey

List of products

Nb products	Nb formats SIG	Nb Excel	Nb Other (pdf, txt,img)	
2	2	0	0	
Name of product / component	Short & Descriptive Title		Format	Units
BLACKSEA_CH07_product	Mapping of the extent of fisheries trawlers (bottom trawling) computed from Vessel Monitoring System Dataset 2013-2016 (number of disturbances per month over the past ten years +		shapefile	None
BLACKSEA_CH07_product_2	Mapping of the potential damage / impact of fisheries on the seafloor ie. extent of fisheries impact on specific seafloor: sandy habitats where trawling is performed - . Beam trawling areas_Romania - . Pelagic trawling areas_Romania - . Trawling areas_Turkey		Shapefile 3 map layers	None

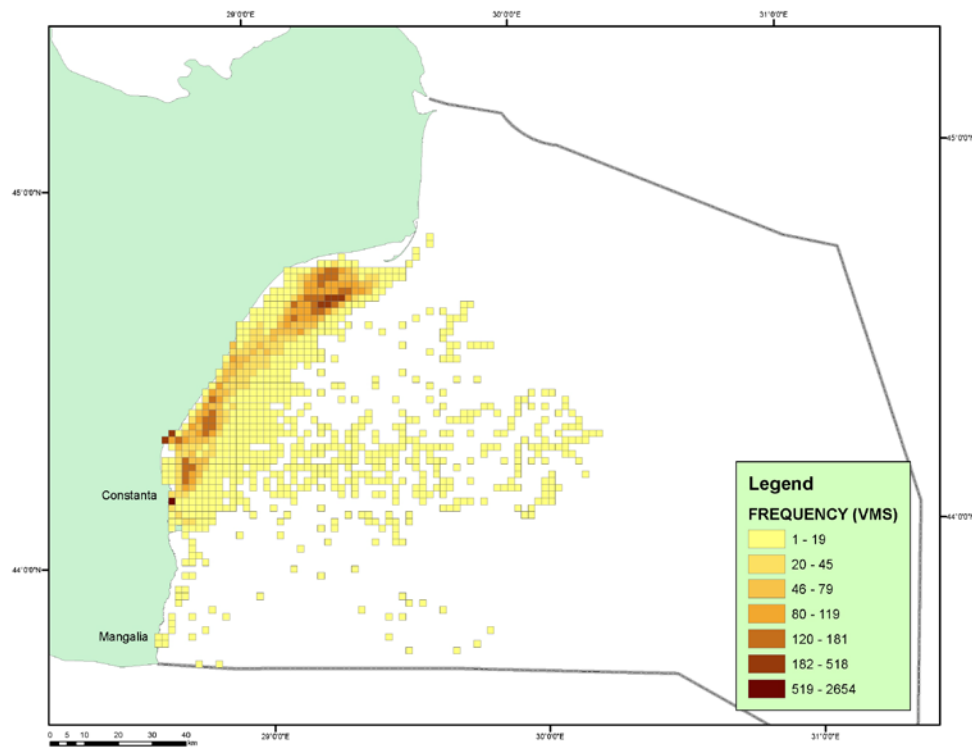
Upstream data identified in Sextant

env. matrix	Characteristics (P02)	Sources (data provider)	input datasets	Air	Biota/Biology	Ice	Fresh Water	Marine Water	Riverbed /Seabed	Human activities
2	3	4	7					4		3

Example

BLACKSEA_CH_7_Product_1

Vessel Monitoring System Dataset 2013-2015- Romanian waters



What – By Who ?



This challenge handles the ability to compute the **seasonal averages and changes of eutrophication** in the basin over past 10 years (i.e. for reduction or increase), **to assess whether the current available marine datasets are available and appropriate to the use case, as well as to indicate gaps in the current EU data collection framework.**

- **National Institute for Marine Research and Development “Grigore Antipa”, NIMRD, Romania**
- Euro-Mediterranean Center for Climate Change, CMCC, Italy
- Institute of Oceanology, Bulgarian Academy of Sciences, IO-BAS, Bulgaria
- University of Plymouth, UPL, United Kingdom
- P.P. Shirshov Institute of Oceanology, Russian Academy of Sciences, SIO-RAS, Russia

List of products

Nb products	Nb formats SIG	Nb Excel	Nb Other (pdf, txt,img)	
1	1	0	0	

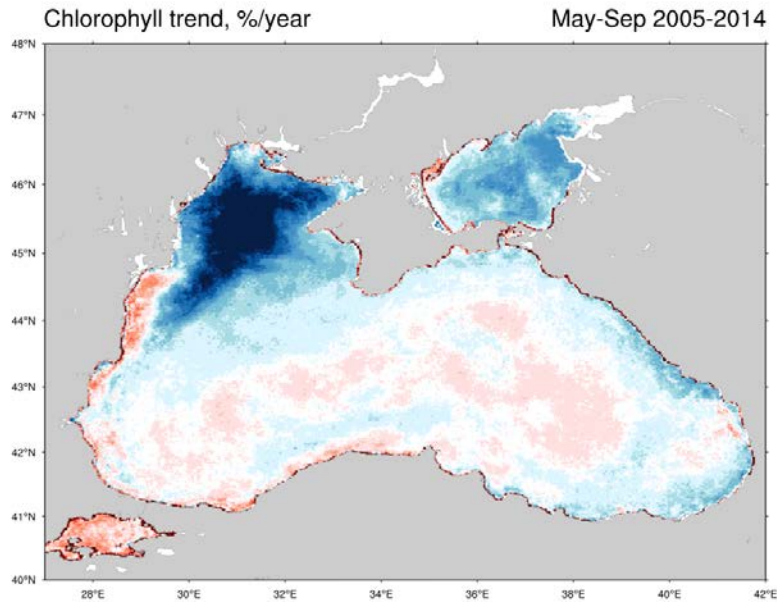
Name of product / component	Short & Descriptive Title	Format	Units
BLACKSEA_CH08_product_1	Mapping of seasonal Chlorophyll over 10 years <ul style="list-style-type: none"> Seasonal concentration Change trend 	Shapefile: 2 map layers	[mg/m3] [mg/m3/year]

Upstream data identified in Sextant

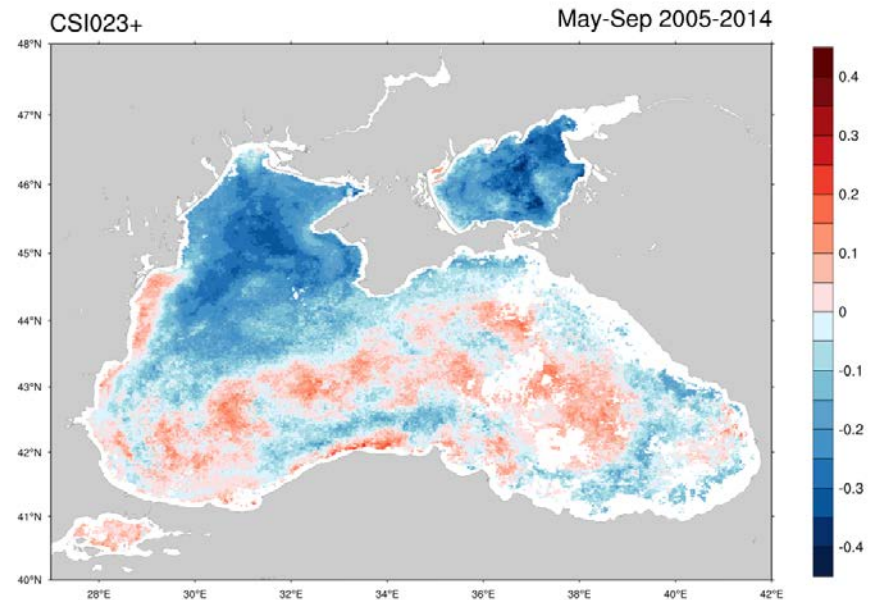
env. matrix	Characteristics (P02)	Sources (data provider)	input datasets	Air	Biota/Biology	Ice	Fresh Water	Marine Water	Riverbed /Seabed	Human activities
1	11	1	45					45		

Example

Product 2 – Mapping of seasonal trend of Chlorophyll over 10 years in BlackSea (2004-2014 time period, 1 km resolution)



$$\text{Normalized trend} = 100\% \frac{\text{Slope}}{\text{Avg}}$$



$$\text{CSI023+} = 100\% \frac{\text{Slope}}{\text{StdDev}}$$

Chlorophyll in transitional, coastal and marine water indicator

What – By Who ?



This challenge handles the ability to compute **annual water discharges for each river bordering the sea basin**, inputs of **fresh water, sediment loading, pollution, biota to sea** (time series), **to assess whether the current available marine datasets are available and appropriate to the use case**, as well as **to indicate gaps in the current EU data collection framework**.

- **National Institute for Marine Research and Development “Grigore Antipa”, NIMRD, Romania**
- Sofia University St. Kliment Ohridski, USOF, Bulgaria
- Ukrainian Scientific Centre of Ecology of the Sea, UkrSCES, Ukraine
- Ivane Javakhishvili Tbilisi State University, TSU, Georgia
- Institute of Marine Sciences, Middle East Technical University, IMS, Turkey
- P.P. Shirshov Institute of Oceanology, Russian Academy of Sciences, SIO-RAS, Russia

List of products

Nb products	Nb formats SIG	Nb Excel	Nb Other (pdf, txt,img)
5	??	5	0

Name of product / component	Short & Descriptive Title	Format	Units
BLACKSEA_CH09_product_1 PC1: Danube River (1921-1984) PC2: Kamtehiya River (1921-1984) PC3: Kamchia River (1965-1979) PC4: Kizilirmak River (1976-1983) PC5: Sakarya River (1976-1983) PC6: Dniester River (1965-1984) PC7: Dnieper River (1976-1983)	Historical monthly mean time series of Water Discharge (QW) into Black Sea basin computed from the Global Monthly River Discharge in situ Data Set (RIVDIS) (1921-1984)	csv, xls & ESRI shapefiles	[m3/s/month] (Qw)
BLACKSEA_CH09_product_2 PC1: Danube Riverv (1921-1984) PC2: Kamtehiya River (1921-1984) PC3: Kamchia River (1965-1979) PC4: Kizilirmak River (1976-1983) PC5: Sakarya River (1976-1983) PC6: Dniester River (1965-1984) PC7: Dnieper River (1976-1983)	Yearly mean time series of Water Discharge (QW) into Black Sea basin computed from the Global Monthly River Discharge in situ Data Set (RIVDIS)	csv, xls & ESRI shapefiles	[m3/s/month] (Qw)

List of products

Nb products	Nb formats SIG	Nb Excel	Nb Other (pdf, txt, img)
5	?	5	0

Name of product / component	Short & Descriptive Title	Format	Units
BLACKSEA_CH09_product_3 PC1: Danube River Mouth PC2: Kamtchiya River Mouth PC3: kamchaa River Mouth PC4: Kizilirmak River Mouth PC5: Sakarya River Mouth PC6: Dniester River Mouth PC7: Dnieper River Mouth	Time series of annual average river temperature (surface temperature 10yr average) at the discharge point into the Black Sea, computed from the CMEMS/MHI Black Sea basin model, physical reanalysis data (1992-2012)	csv, xls &ESRI shapefiles	[°C]
BLACKSEA_CH09_product_4 PC1: Danube River Mouth PC2: Kamtchia River Mouth PC3: Kamchia River Mouth PC4: Kizilirmak River Mouth PC5: Sakarya River Mouth PC6: Dniester River Mouth PC7: Dnieper River Mouth	Time series of annual average of river nitrate (surface concentration of nitrate 10yr average), computed from the CMEMS/MHI Black Sea basin model bio-chemical reanalysis data (1998-2012)	csv, xls &ESRI shapefiles	[mmol m ⁻³]

List of products

Nb products	Nb formats SIG	Nb Excel	Nb Other (pdf, txt,img)
7	0	5	0

Name of product / component	Short & Descriptive Title	Format	Units
BLACKSEA_CH09_product_5 PC1- Danube River (Chilia RO144000) Mouth (2008-2012) PC2- Danube River (Ren RO143900) Mouth (2008-2012) CC3- Danube River (Sulina RO144300) Mouth (2008-2012) PC4- Kamtchiya River (Kamtchia BG-RV30028061) Mouth (2003-2007) PC5- VRANA Station (Vrana BG-RV30028504) Mouth (2003-2007) PC6- Veleka Station (Veleka BG-RV30055517) Mouth (2005 and 2007)	Yearly mean of the total phosphorus at river discharge into the Black Sea, at surface (2008-2012) based on water rivers EEA's databases	csv, xls & shapefiles	[mg/l N]
BLACKSEA_CH09_product_6	No information available on eel recruitment and eel escapement (biomass) to make the product	N/A	N/A
BLACKSEA_CH09_product_7	No information available on salmon recruitment and salmon escapement (biomass) to make the product	N/A	N/A

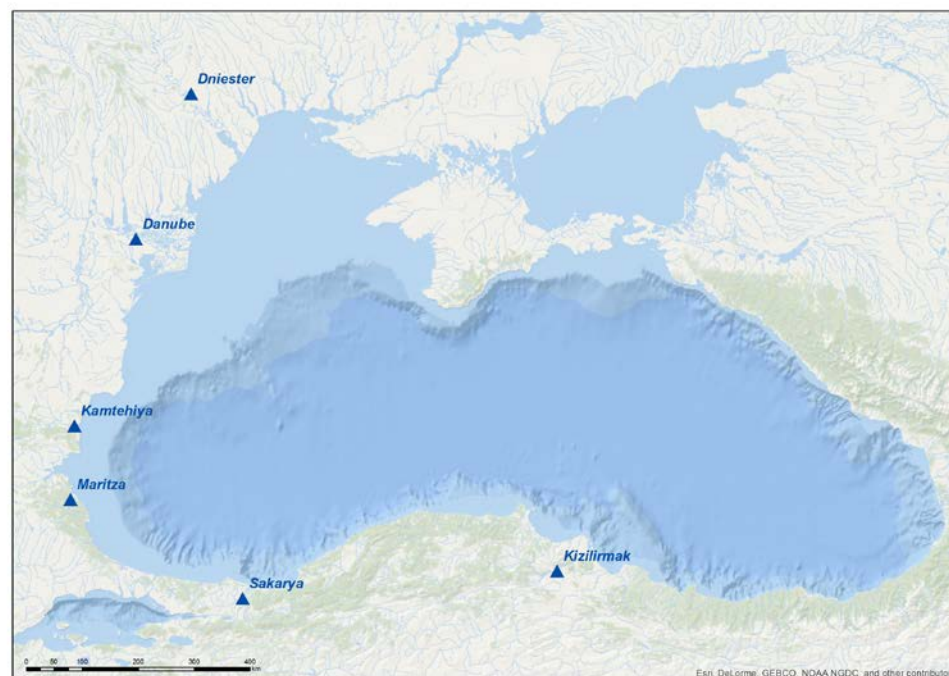
Upstream data identified in Sextant

env. matrix	Characteristics (P02)	Sources (data provider)	input datasets	Air	Biota/Biology	Ice	Fresh Water	Marine Water	Riverbed /Seabed	Human activities
2	8	16	71				32	39		

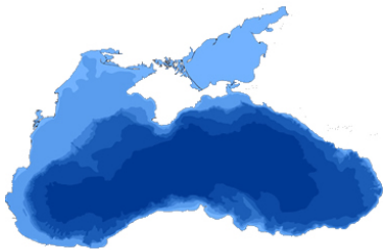
Example

Product 1 and 2– Monthly and Yearly mean time series of Water Discharge (Qw) [m³/s] into Black Sea basin from in situ data

Product	PointID	Source	River	Station	Country	Area	Discharge Units	Area Units	Starting Year	End Year	Lat	Lon
BLACKSEA_CH_9_Product_1_Danube00765_1	765	RivOS	Danube	Ceatal Izmail	Romania	807000 km ²	m ³ /sec	km ²	1921	1984	45.18	28.8
BLACKSEA_CH_9_Product_1_Kamtehiya00775_2	775	RivOS	Kamtehiya	Gzodevo	Bulgaria	4857 km ²	m ³ /sec	km ²	1965	1979	43.02	27.81
BLACKSEA_CH_9_Product_1_Maritza00181_3	181	RivOS	Maritza	Plovdiv	Bulgaria	7931 km ²	m ³ /sec	km ²	1965	1979	42.15	27.75
BLACKSEA_CH_9_Product_1_Kizilirmak804_4	804	RivOS	Kizilirmak	Inozu	Turkey	75121 km ²	m ³ /sec	km ²	1976	1983	41.29	35.55
BLACKSEA_CH_9_Product_1_Sakarya802_5	802	RivOS	Sakarya	Borbasi	Turkey	55322 km ²	m ³ /sec	km ²	1976	1983	40.96	30.51
BLACKSEA_CH_9_Product_1_Dniester776_6	776	RivOS	Dniester	Bendery	U.S.S.R	66100 km ²	m ³ /sec	km ²	1965	1984	46.8	29.68
BLACKSEA_CH_9_Product_1_Dniester805_7	805	RivOS	Dniester	DniesterHydr	Ukrainian,S.S.R	463000 km ²	m ³ /sec	km ²	1965	1984	46.8	29.68



What – By Who ?



This challenge handles the ability to compute **digital bathymetry and uncertainty** for sampling areas of the Black Sea, and indicate regions showing **priority areas for surveying for safer navigation**, to assess whether the current available marine datasets are available and appropriate to the use case, as well as to indicate gaps in the current EU data collection framework.

- Institute of Oceanology, Bulgarian Academy of Sciences, IO-BAS, Bulgaria

List of products

Nb products	Nb formats SIG	Nb Excel	Nb Other (pdf, txt, img)
4	4	0	0

Name of product / component	Short & Descriptive Title	Format	Units
BLACKSEA_CH10_product_1	Black Sea and Azov sea coastlines by digitalization of 14.25 m panchromatic Landsat 7 ETM+ satellite images	shapefile	None
BLACKSEA_CH10_product_2	Contour bathymetric map for the Black sea basin with intervals of 100 meters This product include data from GEBCO, EMODNET	shapefile	[m]
BLACKSEA_CH10_product_3	BlackSea divided into regions showing priority areas for surveying for safer navigation	shapefile	None
BLACKSEA_CH10_product_4	Map of uncertainty in water depth for Black sea basin	shapefile	None

Upstream data identified in Sextant

env. matrix	Characteristics (P02)	Sources (data provider)	input datasets	Air	Biota/Biology	Ice	Fresh Water	Marine Water	Riverbed /Seabed	Human activities
1	1	5	42						42	

Black Sea Checkpoint

What – By Who ?



This challenge handles the ability to **identify & source alien species** in the sea basin, as well as any **adverse impacts on ecosystems and socio-economy**, as established by the ballast water management convention, **to assess whether the current available marine datasets are available and appropriate to the use case, as well as to indicate gaps in the current EU data collection framework.**

- **Institute of Oceanology, Bulgarian Academy of Sciences, IO-BAS, Bulgaria**
- **Institute of Marine Sciences, Middle East Technical University, IMS, Turkey**
- **P.P. Shirshov Institute of Oceanology, Russian Academy of Sciences, SIO-RAS, Russia**

List of products

Nb products	Nb formats SIG	Nb Excel	Nb Other (pdf, txt, img)
6	2	1	5

Name of product / component	Short & Descriptive Title	Format	Units
BLACKSEA_CH11_product_1	Table of <i>Mnemosopsis leidy</i> alien species abundance and biomass distribution in the Black sea (1991-2015)	ascii	ind/m2 g/m2
BLACKSEA_CH11_product_2	Digital maps of <i>Mnemosopsis leidy</i> alien species abundance distribution in the Black sea (1991-2015)	shapefile	ind/m2
BLACKSEA_CH11_product_3	Digital maps of <i>Mnemosopsis leidy</i> alien species biomass distribution in the Black sea (1991-2015)	shapefile	g/m2
BLACKSEA_CH11_product_4	Table of <i>Beroe ovata</i> alien species abundance and biomass distribution in the Black sea (2012-2015)	ascii	ind/m2 g/m2
BLACKSEA_CH11_product_5	Table of <i>Mnemosopsis leidy</i> alien species biomass time series dataset in Gelendzhik Blue Bay , Black sea (1989-1995)	Excel	g/m2
BLACKSEA_CH11_product_6	Figure of <i>Mnemosopsis leidy</i> alien species biomass time series dataset in Gelendzhik Blue Bay , Black sea (1989-1995)	Jpeg	g/m2

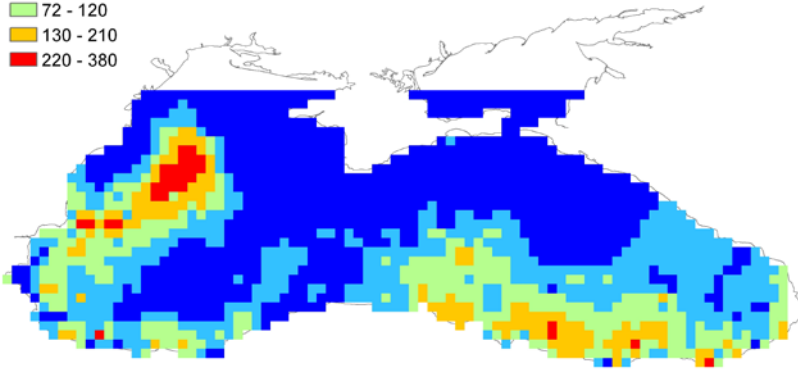
Upstream data identified in Sextant

env. matrix	Characteristics (P02)	Sources (data provider)	input datasets	Air	Biota/Biology	Ice	Fresh Water	Marine Water	Riverbed /Seabed	Human activities
2	8	16	71				32	39		

Example

Digital map *Mnemiopsis leidyi* abundance distribution, (ind/m²)M.leidyi_abundance
<VALUE>

- 0 - 32
- 33 - 71
- 72 - 120
- 130 - 210
- 220 - 380



Legend

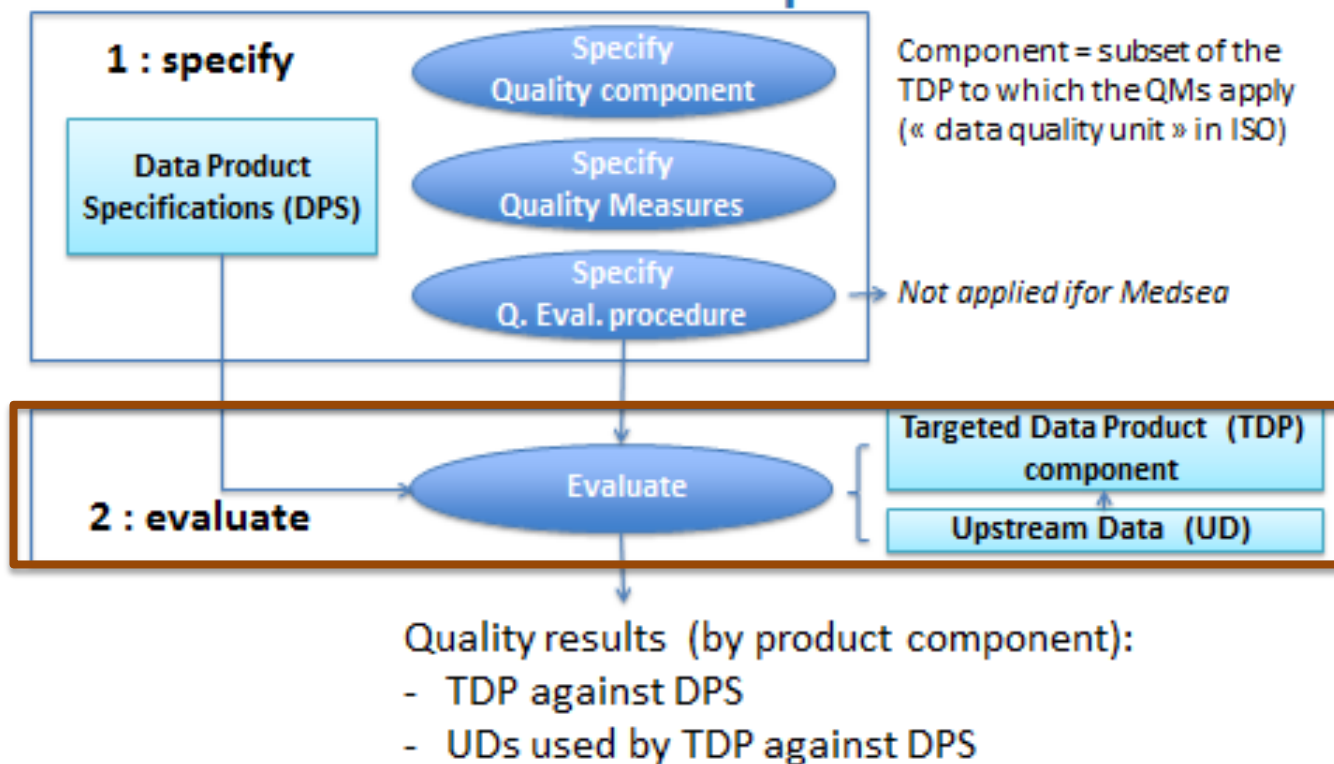
- *Mnemiopsis leidyi* data



Products overview

Chalange	Number of Data sets	Number of Products	FORMAT			Prepared		Why can not prepared
			GIS	Excell	Other	Yes	No	
CH01: WINDFARM SITTING	44	3	3	0	2	3	0	
CH02: MARINE PROTECTED AREAS	41	4	4	0	0	4	0	
CH03: OIL PLATFORM LEAKS	19	2	0	0	2	2	0	
CH04: CLIMATE	121	18	12	6	0	10	8	No enough long data series
CH05: COASTS	46	10	4	7	0	7	3	No enough long data series
CH06: FISHERIES MANAGEMENT	3	3	0	7	0	3	0	
CH07: FISHERIES IMPACT	7	2	2	0	0	2	0	
CH08: EUTROPHICATION	45	1	1	0	0	1	0	
CH09: RIVER INPUTS	71	7	0	5	0	5	2	Not relevant for Black Sea
CH10: BATHYMETRY	42	4	4	0	0	4	0	
CH11: ALIEN SPECIES	71	6	2	1	5	6	0	
TOTAL	510	60	32	26	9	47	13	

Assessment process

**NDLR: Rating scale**

Indicators are designed to draw attention on critical factors. A color rating scale is associated to them to help discovery and viewing of the quality information in the reports and on the portal using the DB .

➤ **Not at all adequate :**

errors between -100% and -10%

➤ **Adequate :**

errors between -10% and +10%

➤ **More than adequate :**

Errors between +100% and +10%

