

The European Marine Observation and Data Network

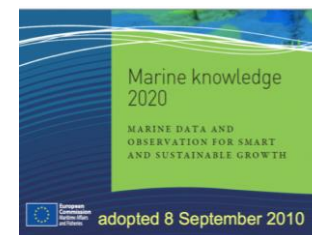


EMODnet

EU-China Blue Year Event

1 June, 2017

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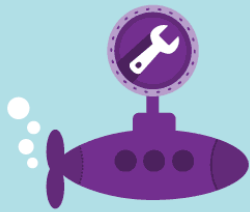


BLUE GROWTH

71%
of the Earth surface
is **WATER**

Why?

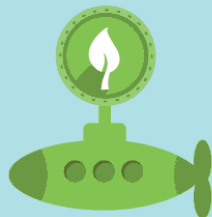
Blue Growth is the European Commission's initiative to further harness the potential of Europe's oceans, seas and coasts for:



Jobs



Value

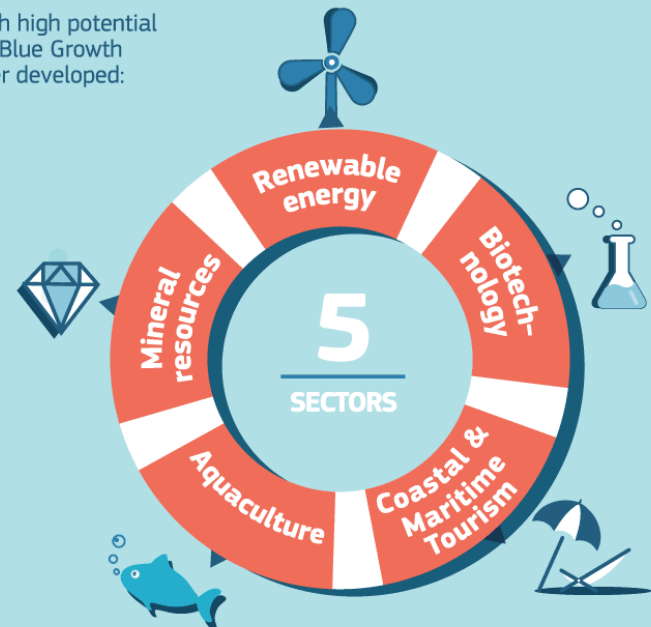


Sustainability

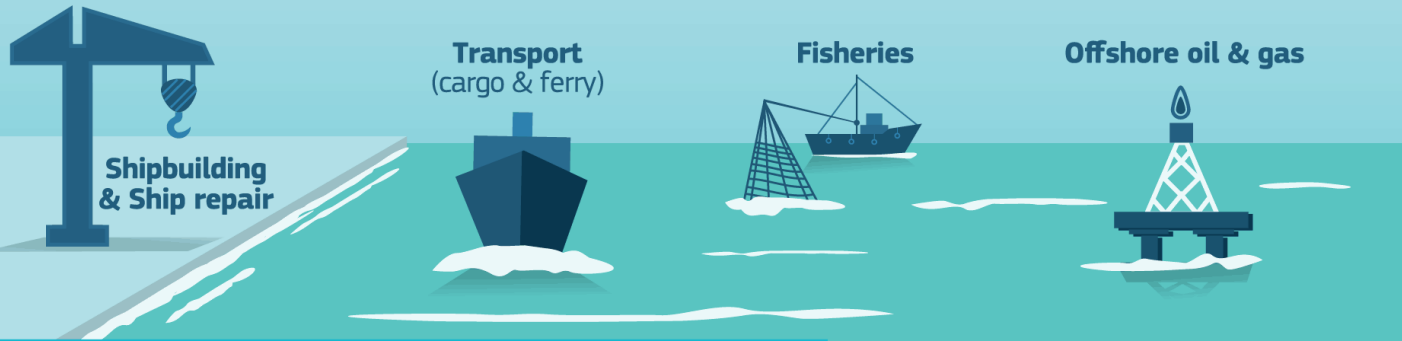


Focus Area

Five sectors with high potential for sustainable Blue Growth are to be further developed:



other sectors of the blue economy crucial for value & jobs



The 5 Blue Growth sectors

Biotechnology
medicines,
industrial enzymes

Renewable energy
wind, waves,
tides, biofuel

Coastal & Maritime Tourism
coastal tourism,
cruise tourism,
yachting

Aquaculture
farming of fish,
shellfish, marine plants

Mineral resources
gravel, sand,
zinc, cobalt,
copper



There is only one Earth, with only one history, and we get only one chance to record it. Ideas not followed through can be taken up again later. A record not made is gone for good. *Editorial - Nature 450*, 761 (6 December 2007)



Cost of Ocean Observation in EU

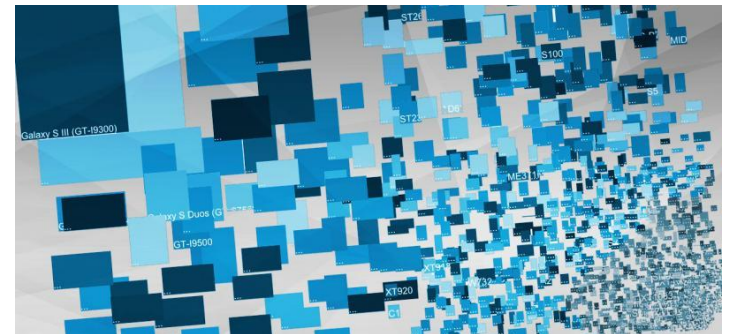
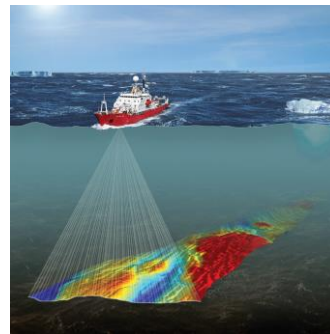
Space data: € 400 M per year

In-situ data: > €1 billion per year

what's the Problem?

Data Acquisition
(Observations)

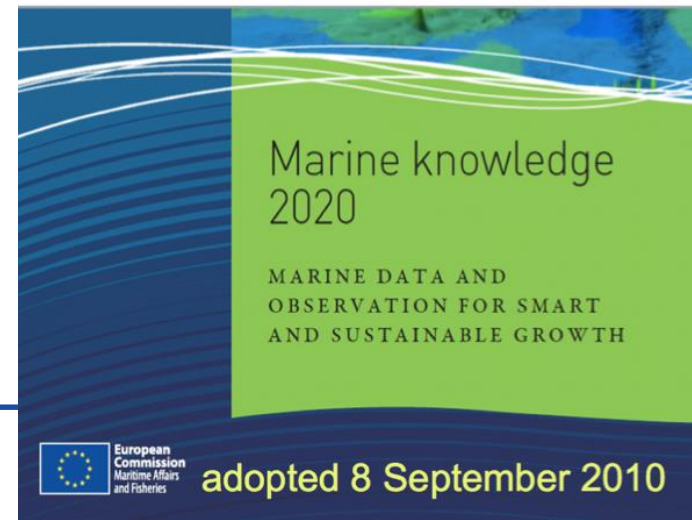
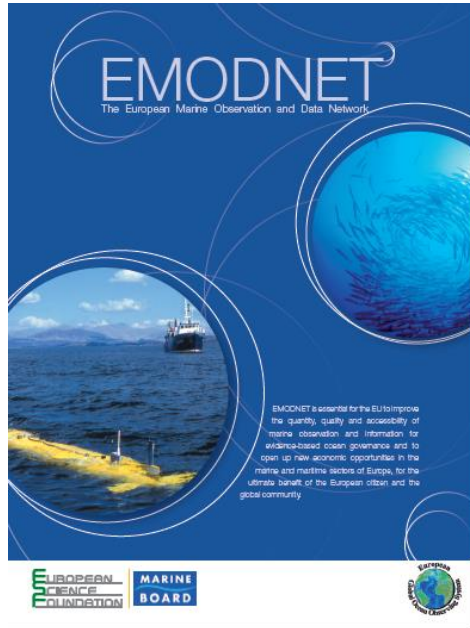
Data management & access



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What can EU do?

- Change the present fragmented EU repositories of marine data with an interoperable sharing framework
- Move to a new paradigm where data are collected once and used for many purposes
- Optimize observation networks by showing how monitoring meets the needs of public and private users (CHECKPOINT)



A vision for an end-to-end, integrated, inter-operable and user-oriented network of European marine observation and data systems



adopted 8 September 2010

Vision Target for 2020

- **Seamless multi-resolution digital seabed map of European waters by 2020**
 - Topography, geology, habitats and ecosystems;
 - Highest resolution possible in areas that have been surveyed;
- **Accompanied by timely information on**
 - Physical, chemical and biological state of the overlying water column
 - Oceanographic forecasts;
- **Easily accessible, interoperable and free of restrictions on use;**

Data

Bathymetry

Data on bathymetry (water depth), coastlines, and geographical location of underwater features such as wrecks

Geology

Data on seabed substrate, seafloor geology, coastal behaviour, geological events and probabilities, and minerals

Metadata

Biology

Data on temporal and spatial distribution of species abundance and biomass from several taxa

Human activities

Data on the intensity and spatial extent of human activities at sea



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Central Portal

www.emodnet.eu

Seabed habitats

Data on modelled seabed habitats based on seabed substrate, energy, biological zone and salinity

Chemistry

Data on concentrations of chemicals (pesticides, heavy metals, antifoulants) in water, sediments and biota

Physics

Data on salinity, temperature, waves, currents, sea level, light attenuation and FerryBox data

Data Products

Data Services

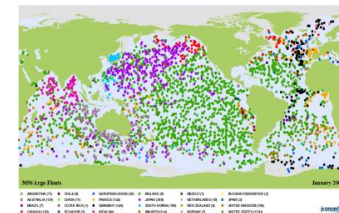
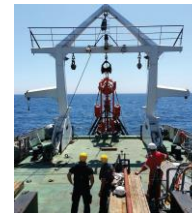
More than just access to data & products

- **Reducing fragmented** marine data landscape
- **Platform for collaboration**: bringing together key European providers, integrators, networks & infrastructures (e.g. EuroGOOS, CMEMS, SDNet, OBIS, ICES, PANGAEA, RSCs, HOs, GeoSurveys...)
 - Stimulate adoption of standards and develop joint solutions for common problems
 - Facilitate down- and up-stream integration & interoperability (WMS, WFS, Web Service, etc.)
- **Raising visibility** of Europe's wealth of marine observations & data resources → attracting more users and more providers
- **Changing culture** towards open data sharing practices & increased collaboration
- **Multi-disciplinary and increasingly global**
- **Long term infrastructure & service** supported by DG MARE



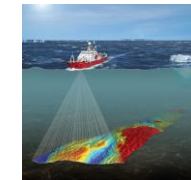
Benefits for data users

- Reduced costs for offshore activities
 - no need to repeat measurement that made by others
 - costs less to assemble data from different sources
- Stimulation of innovation and competition
- Reduced uncertainty in knowledge
- Better policies & management



Benefits for data providers

- Increase number/kinds of users - help justify investments
- Contribute to data products - increase visibility
- Make better use of own data via access to others' data
- May help data providers comply with their obligations





Secretariat – DG MARE - EASME

users

Expert User
Group



Are data fit for use?
EMODnet Sea-Basin Checkpoints
As surrogate users

service providers services to customers

access to data and data products from more
than one theme

Central Portal www.EMODnet.eu

EMODnet THEMATIC GROUPS provide access to data and create data products

Steering Committee

Bathymetry

Chemistry

Habitats

Physics

Geology

Biology

Human
activity

HOs

SDC

RSCs

Euro
GOOS

CMEMS

SDC

GSS

PANGAEA

OBIS

ICES

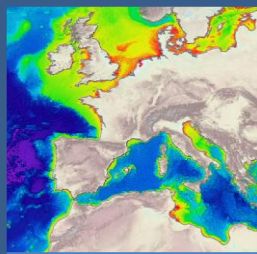
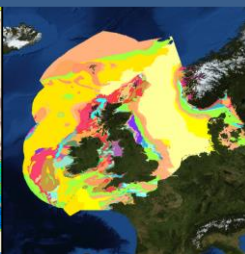
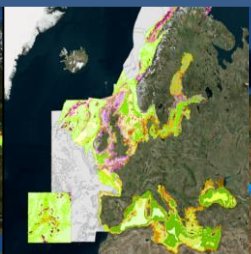
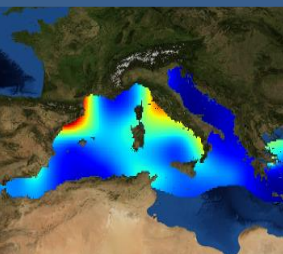
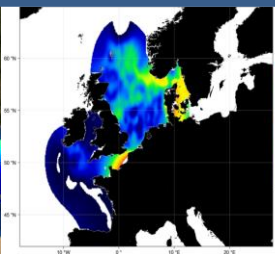
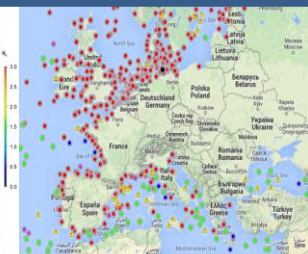

RSCs

Data repositories in Member States

www.EMODnet-ingestion.eu



Thematic data coverage

Bathymetry	Geology	Seabed habitats	Chemistry	Biology	Physics	Human activities
						
<p>Bathymetric Data and metadata from surveys</p> <p>Bathymetry layers: average, minimum, maximum water depths</p> <p>Higher resolution data layers in coastal areas</p> <p>Underwater features</p> <p>Shipwrecks</p>	<p>Coastal behaviour (migration)</p> <p>Geological events and probabilities (volcanoes, landslides)</p> <p>Minerals (gas hydrate deposits, sulphides, phosphorite, cobalt)</p> <p>Seabed substrate (gravel, sand, mud)</p> <p>Seafloor geology</p> <p>Seismology</p>	<p>Depth</p> <p>Seabed substrate Energy at seabed (waves & current)</p> <p>Salinity</p> <p>Temperature</p> <p>Light at seabed</p> <p>Oxygen at seabed</p>	<p>DDT PCB TBT TPT</p> <p>Oxytetracycline Mercury Cadium Lead Anthracene Fluoroanthene Cs137 Pu239 Nitrogen (Din, TN) Phosphorus (DIP, TP) pH,pCO2,alkalinity O2,CO2 Polyethylene Polypropylene Chlorophyll Silicates Organic Matter</p> <p>10-y running averages</p>	<p>Biomass Abundance Gridded Abundance (DIVA)</p> <p><i>species groups</i> phytoplankton zooplankton angiosperms macro-algae invertebrate bottom fauna</p> <p>birds mammals reptiles Fish</p> <p>Temporal evolution in species distribution and abundance</p>	<p>Waves</p> <p>Water temperature</p> <p>Water salinity/conductivity/density</p> <p>Currents</p> <p>Light attenuation/fluorescence</p> <p>Sea level</p> <p>Wind</p> <p>Underwater noise</p> <p>River</p> <p>Ice</p>	<p>Aggregate Extraction Dredging</p> <p>Fisheries</p> <p>Hydrocarbon Extraction Main Ports</p> <p>Mariculture</p> <p>Ocean Energy Facilities</p> <p>Pipelines and Cables</p> <p>Protected Areas</p> <p>Waste Disposal</p> <p>Wind Farms</p> <p>Other Forms of Area Management /</p>

Get started

Search over 150 data sets, services and maps, ...

EMODnet Data Portal

Here you will find data, services and maps and more.

Browse by topics

- Biota** 36
- Oceans** 35
- Boundaries** 35
- Utilities communication** 15
- Environment** 6
- Geoscientific information** 3
- Economy** 3
- Planning cadastre** 2
- Elevation** 1
- Transportation** 1
- Intelligence military** 1

Browse resources

- Dataset** 113
- Series** 32
- Service** 5

	World Marine Heritage Sites <i>Dataset</i>		world_countries_coasts <i>Dataset</i>		world_estuary_delta <i>Dataset</i>
	World Bays, Gulfs, Lagoons, Inlets, Coves, Fjords, Creeks, <i>Dataset</i>		SeaVoX - Sea Areas Polygons (v16, 2015) <i>Dataset</i>		OSPAR Regions <i>Dataset</i>
	OSPAR Boundaries <i>Dataset</i>		North America Coastal Water Bodies <i>Dataset</i>		Global Biogeochemical Provinces (Longhurst) <i>Dataset</i>

EMODnet Checkpoints

MedSea

North Sea

Arctic

Baltic

Atlantic

Black Sea

2013

2013

2015

2015

2015

2015



Wind farm siting

[Read more](#)



MPA

[Read more](#)



Oil leak platform

[Read more](#)



Climate change

[Read more](#)



Coast

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Fisheries management

[Read more](#)



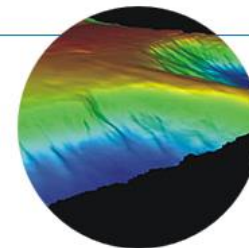
Fisheries impact

[Read more](#)



River input

[Read more](#)



Bathymetry

[Read more](#)



Alien species

[Read more](#)

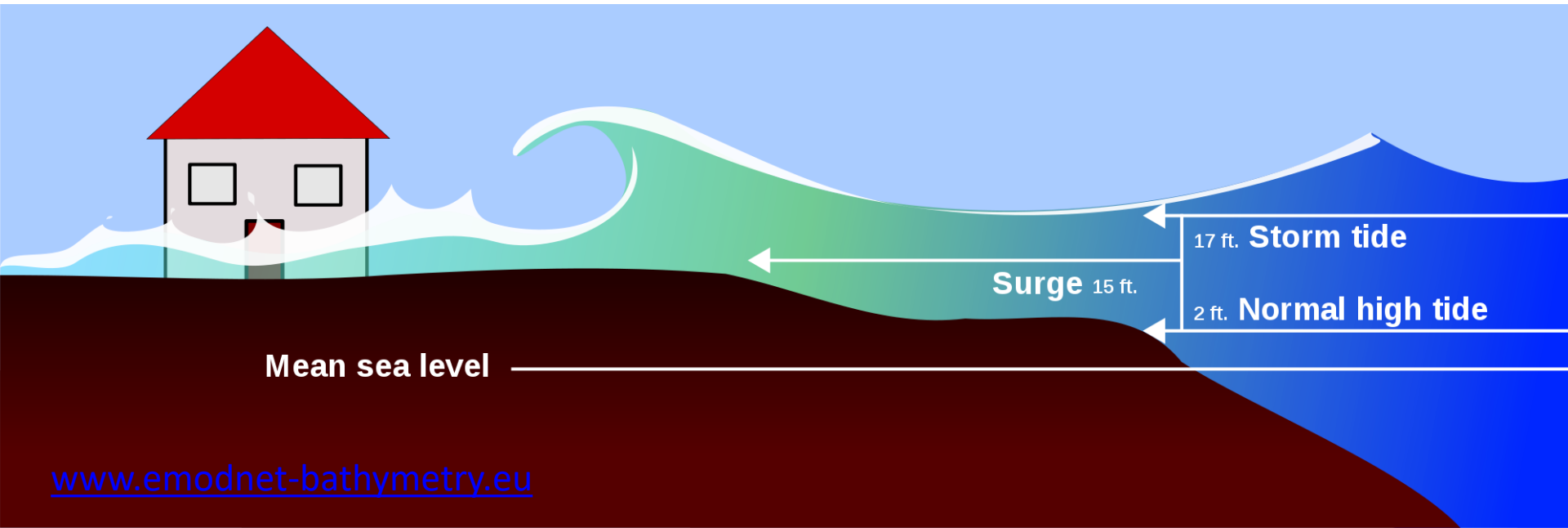
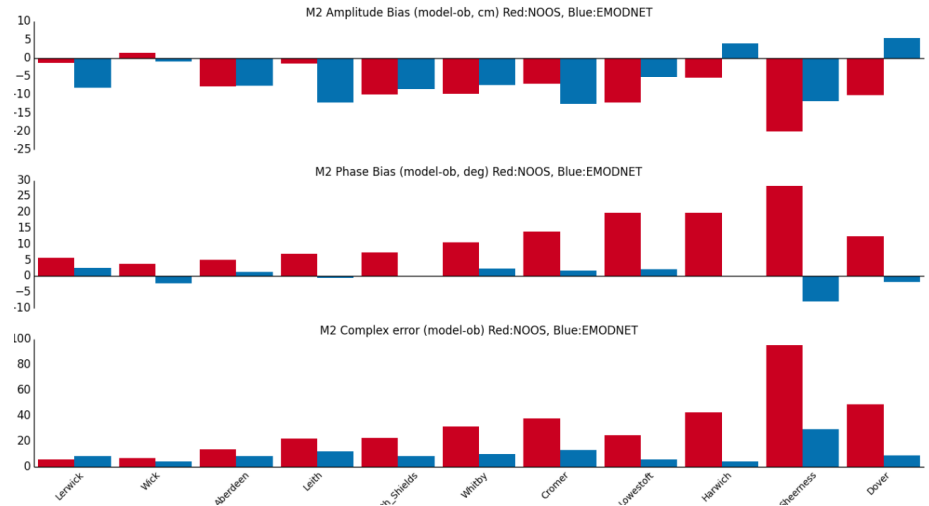


Targeted at professionals, well-informed experts, policy advisors from 4 main communities:

- 1. Public sector organisations and authorities**
- 2. Civil society (NGOs, ...)**
- 3. SME's and large companies from private sector**
- 4. Research Community**

EMODnet bathymetry

- UK Met Office & NOC new storm surge forecast model
- Requires tidal solution is accurate which in turn requires an accurate bathymetry.
- Using a bathymetry based on the EMODnet dataset led to an overall improvement in the model tide significant improvements using EMODnet.





The world's most popular Marine & Lakes app!
Get the same detailed charts as on the best GPS plotters.



[Coverage](#)

[Compatibility](#)

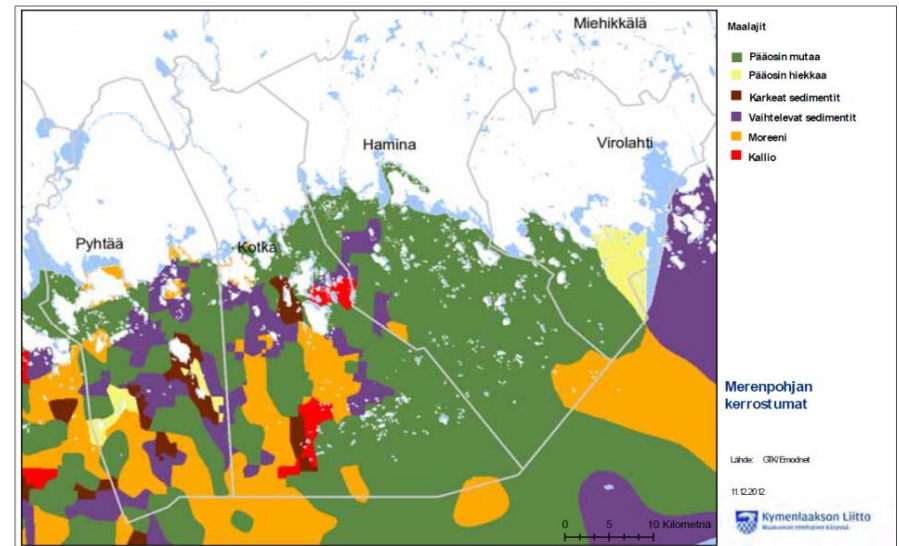
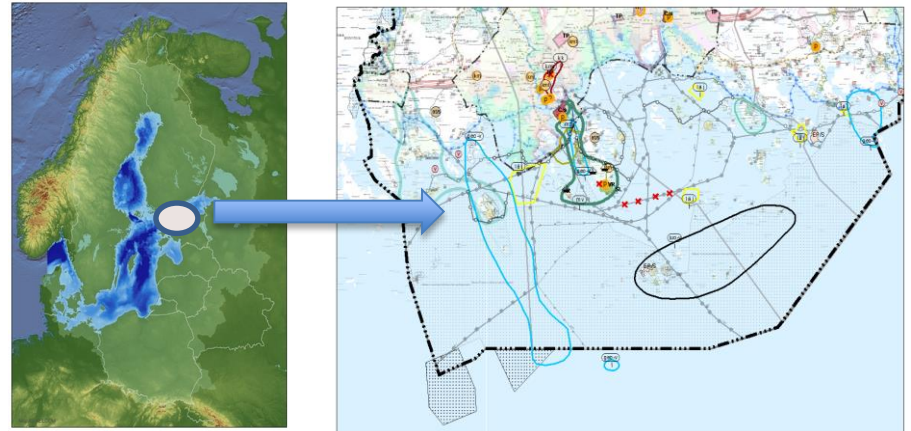
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EMODnet Geology

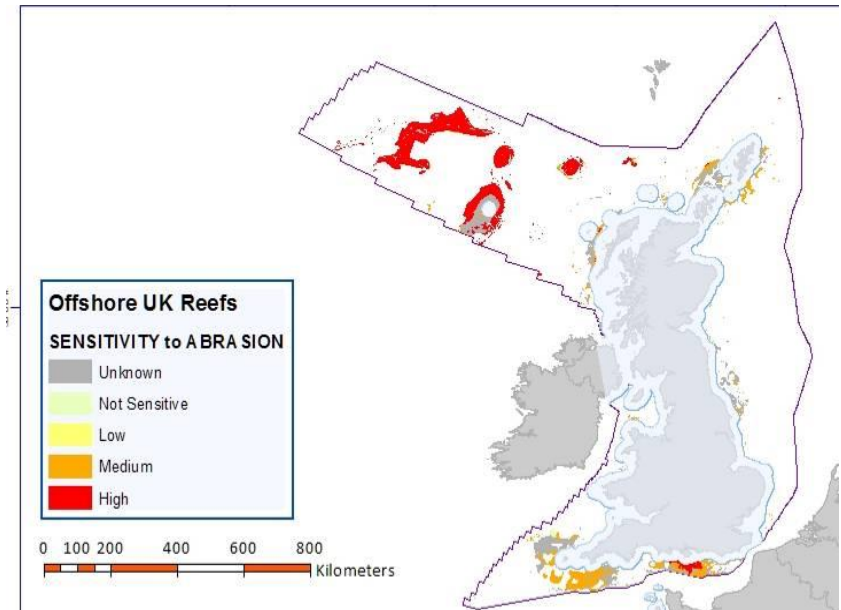
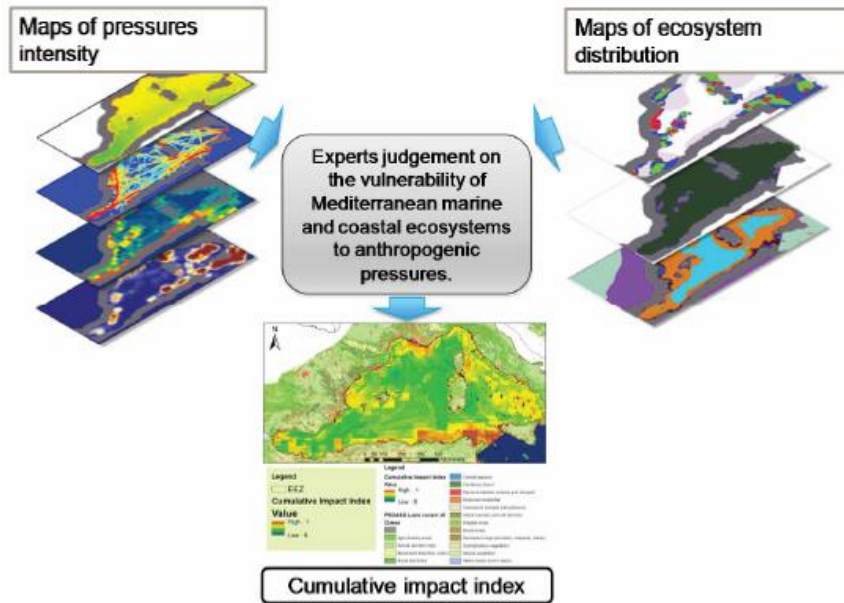
- Gulf of Finland Regional Plan for Trade and the Sea Area
- **EMODnet-Geology** seabed substrate data provided to planners.
- Marine geologists (and biologists) interacted with planners to evaluate what is available for marine spatial planning.
- Information can be understood by decision-makers



EMODnet Seabed Habitats

Enables a good many uses

- Joint land use - seabed habitats map for cumulative impact index (FP7 Pegaso)
- Sensitivity maps for assessing Seabed Integrity





It is all about sharing & bringing people and ideas together

