

# Interreg Mediterranean



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## SHAREMED

*Sharing and enhancing capabilities to address  
environmental threats in the Mediterranean sea*

*Coordinator: Cosimo Solidoro - OGS*

Programme co-financed by the  
European Regional Development Fund

Programme cofinancé par le Fonds  
européen de développement régional





# SHAREMED strat project

## **GOAL:**

increase the capability of regional, subregional, and local authorities and of research community to assess and address hazards related to pollution and environmental threats in Mediterranean transnational waters

## **HOW:**

- enhancing, observing & assessing capabilities
- sharing knowledge, observation and technologies
- building common frameworks, tools and services
- roadmap and action plans

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# 3 types of target groups and stakeholders by 3 spatial scales (med, study site, local)

**A** Stakeholders **needing** observing & assessing capabilities

**B** Institutions already **managing** observing infrastructured and willing to share and exchange (includes local and regional authorities and organizations in charge of environmental threats, i.e. those **offering** the services)

**C** Experts able to provide suggestion/ knowledge /practice on how to enhance obs & assess capabilities (includes scientific community, i.e. **advicing**)

# SHAREMED challenge

- to design a transnational system of systems for observing and assessing
- to test its implementation in several test area

***not really new:***

***but how come it is still to be done ???***

***technological challenge (scientific community)***

***governance challenge (?who should be in charge? )***



# ENHANCE OBSERVING CAPABILITIES

*NETWORK of transnational systems of **HF radar** for **surface current**; harmonization; **data assimilation***

***Biological dimension** : visual observation & molecular methods (**eDNA & metabarcoding**)*

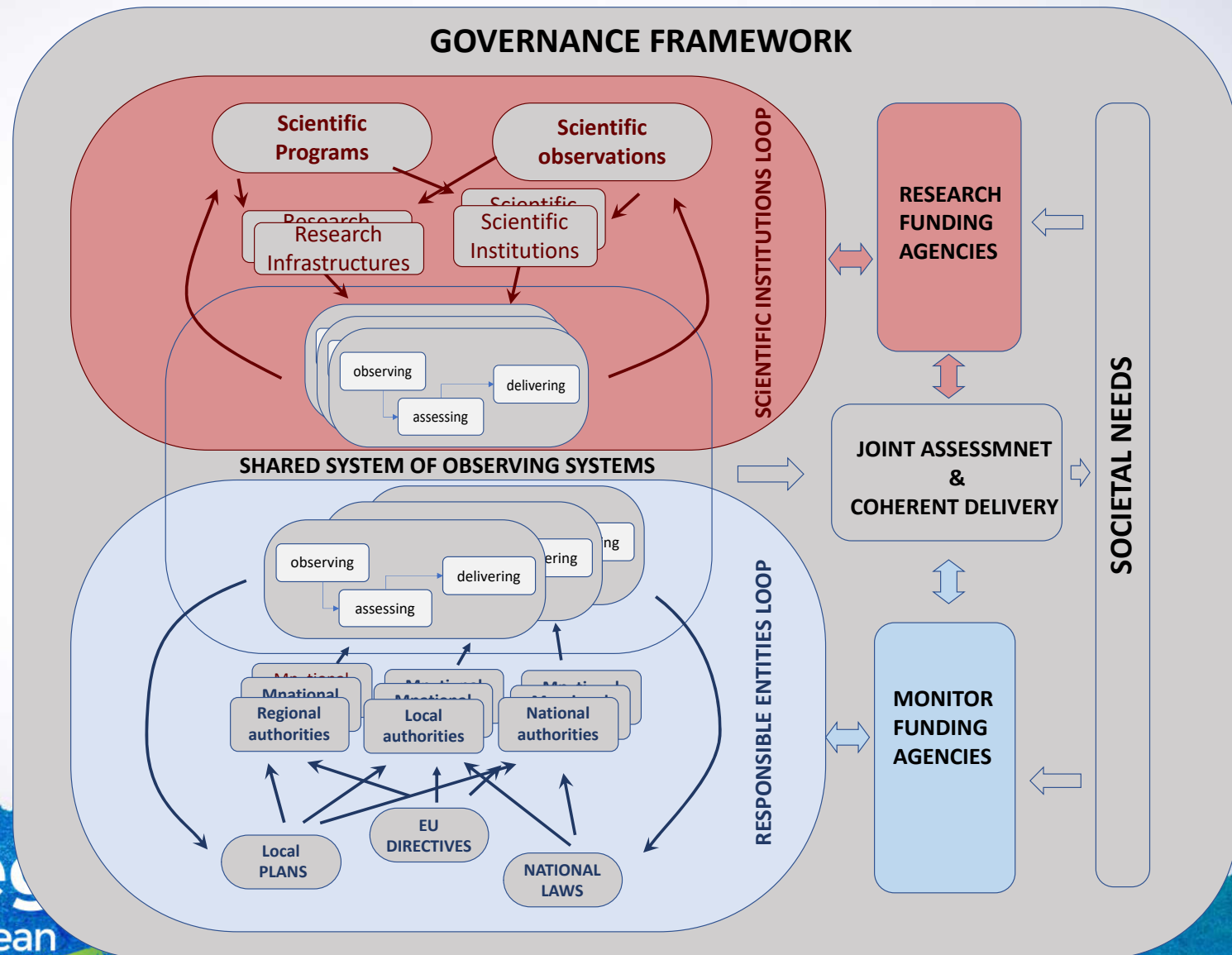
*New **high resolutions satellite** products*

*Relocatable high res phy & biogeochemical short term **forecast systems***

# Can one *really* integrate systems managed by different authorities?

*(harmonize agenda & align objective; share ownerships)*

multi-scale  
multi-goal  
m-purpouse





# SHAREMED Action sites

*three transnational sites:  
**NorthAdriatic** ,  
**NorthWestMed**,  
**Sicily Channel**  
plus Mediterranean scale*



**FRAMEWORKS** for *sharing, consolidation, integration, harmonization* of existing information, data, technology, infrastructure and expertise

**DESIGN** transnational *systems of observing systems* and marine modelling frameworks, build and implemented for each site

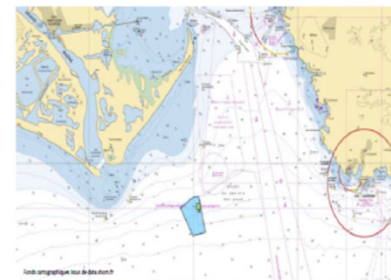
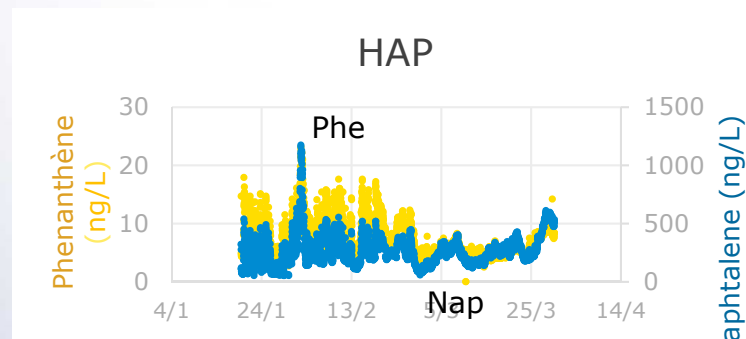
- > Shared monitoring capabilities
- > Shared operational models
- > Shared webportals
- > Shared Atlas

## SHAREMED

### Enhance and expand monitoring capabilities (WP 3.3)

#### Development of a strategy to acquire time series of organic and inorganic contaminants

The objective is to test the strategy of measuring time series of contaminants and develop a specific and adapted protocol as part of improvement of new observation technologies and make them ready for operational use



#### Site MISTRAL

Rhône mouth and Gulf of Fos



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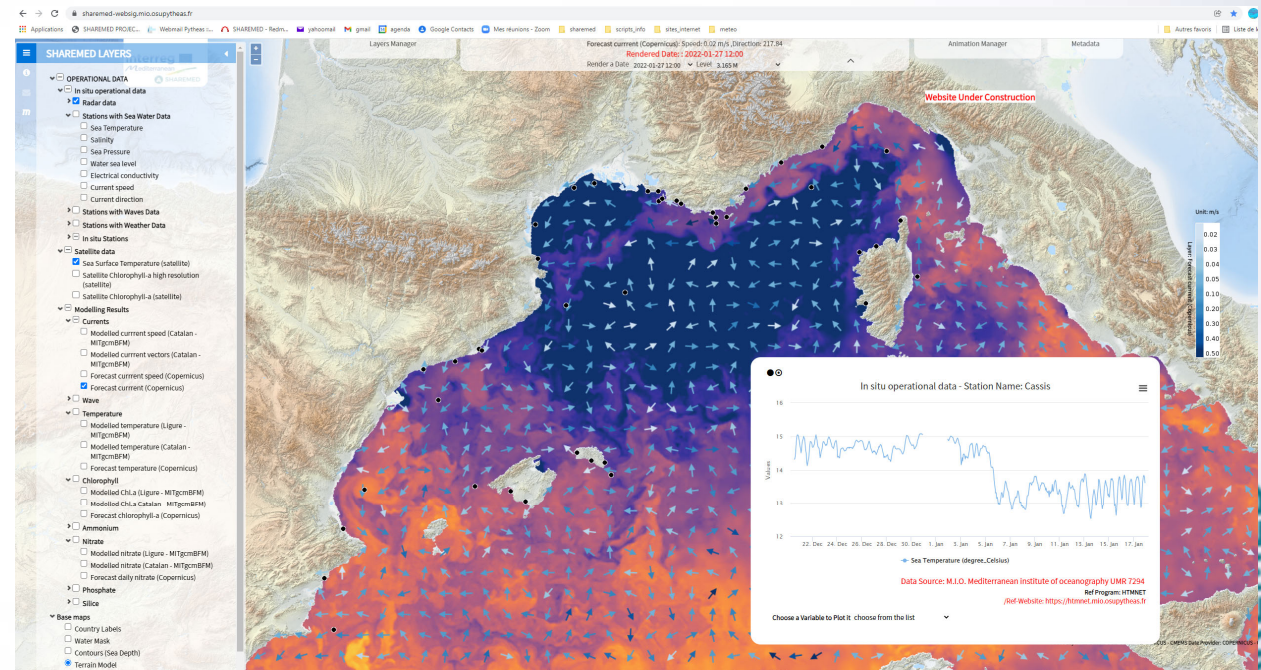
# SHAREMED: North-west Med, Adratic, Sicily channels

<https://sharemed-websig.mio.osupytheas.fr/>

1) To develop a webGIS in order to visualize marine operational data (with simple and intuitive interface)

2) To add results from SHAREMED modelling activities on NWMED

3) To add maps from the SHAREMED Atlas activities



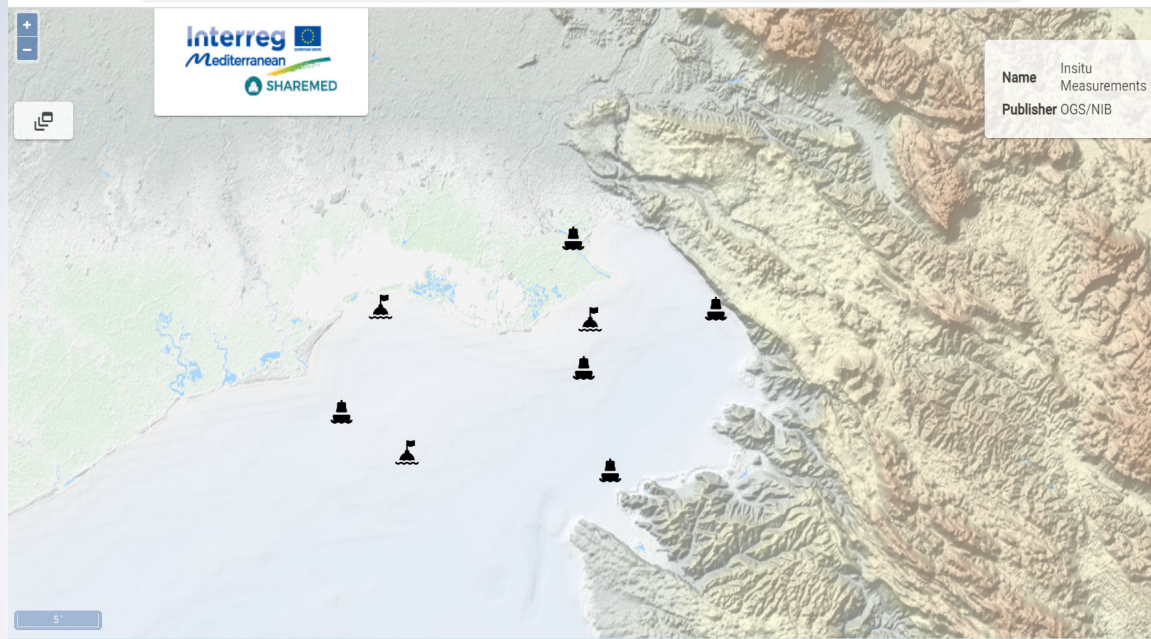
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- Near-real time data from *in situ* marine buoys
- Currents from coastal radar-HF
- Near-real time satellite products
- Simulations outputs from forecast models, including SHAREMED models

## SHAREMED Northern Adriatic – Study Site

<https://sharemed-northadriatic-geoportal.ogs.it/>

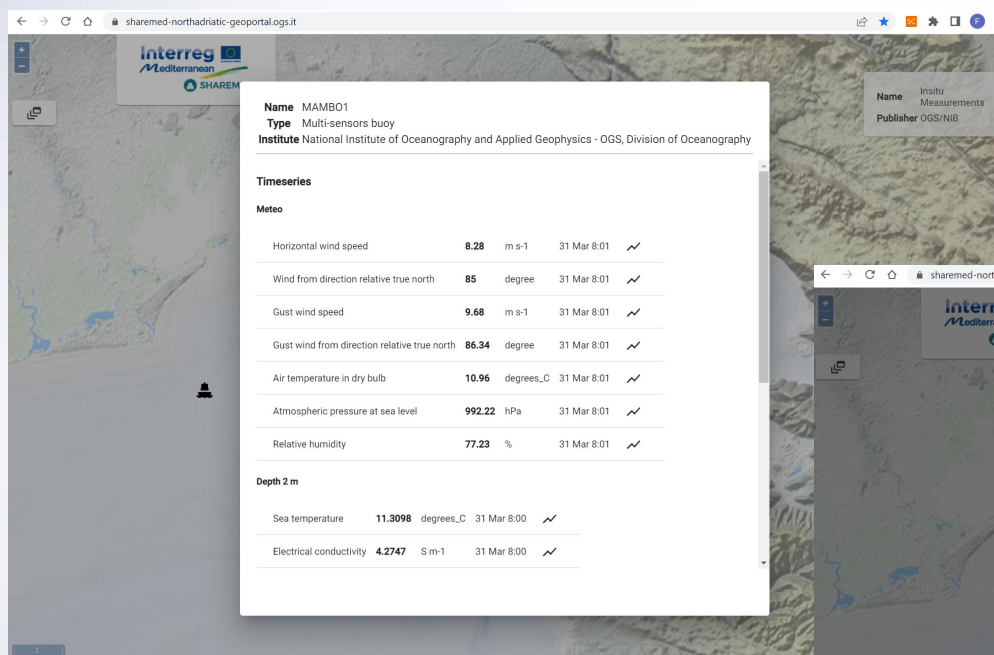


Layer available:

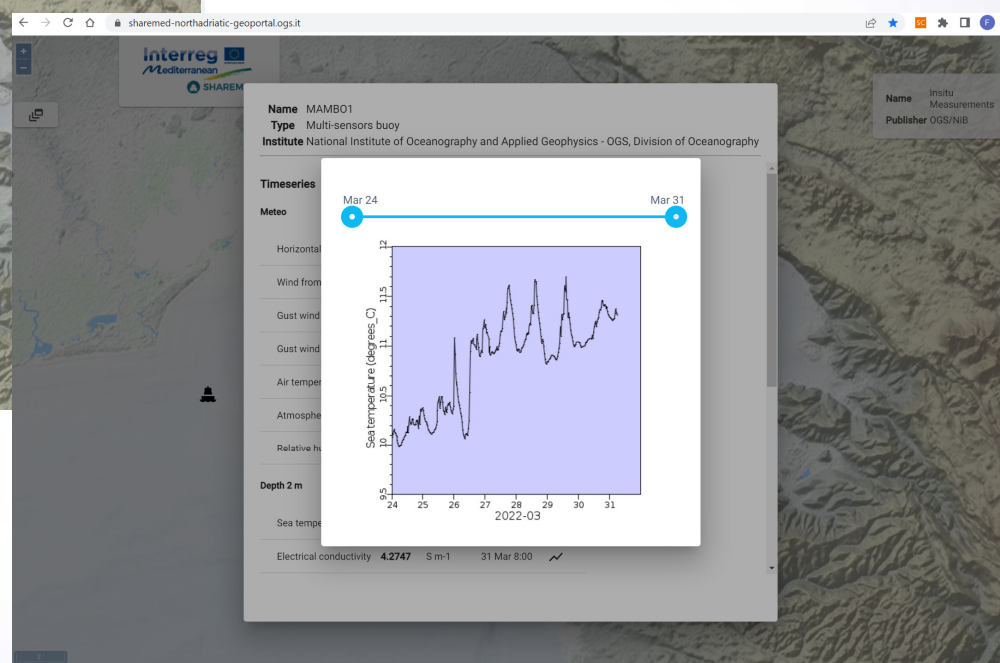
- Insitu real time data
- Model
- HF Radar maps
- Satellite product maps



## The Northern Adriatic – Geoportal In situ measurements

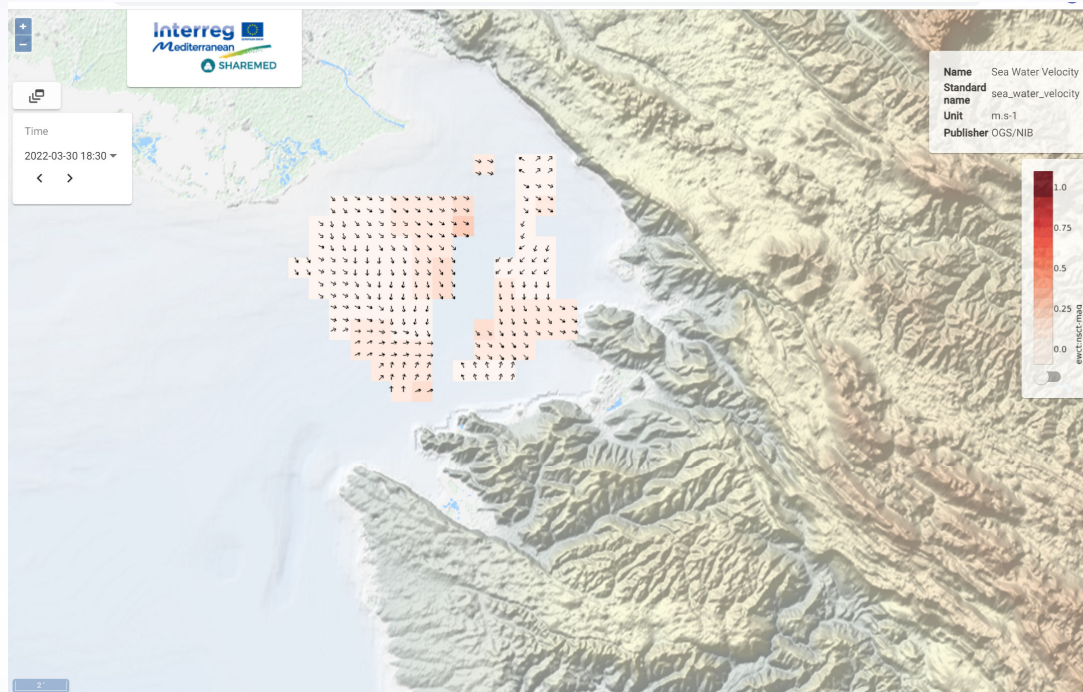


Time series sea temperature (last week) from MAMBO1 - Miramare



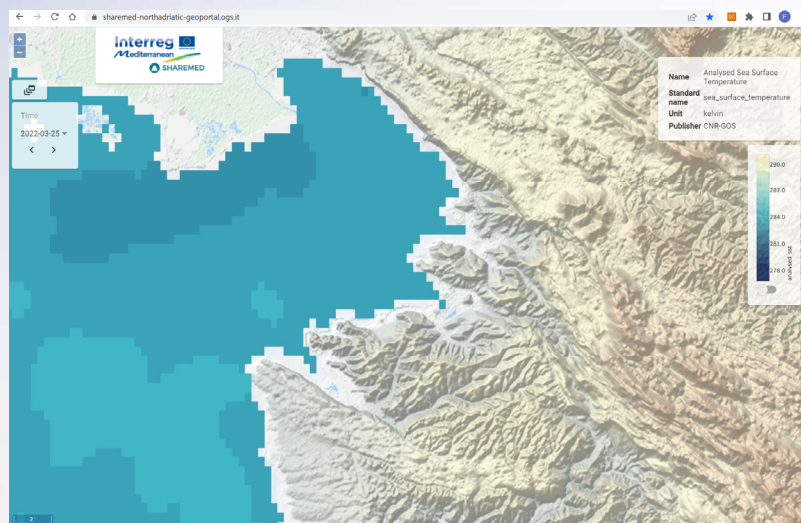
Latest data acquired from  
MAMBO1 - Miramare

## The Northern Adriatic – Geoportal Surface Current Maps



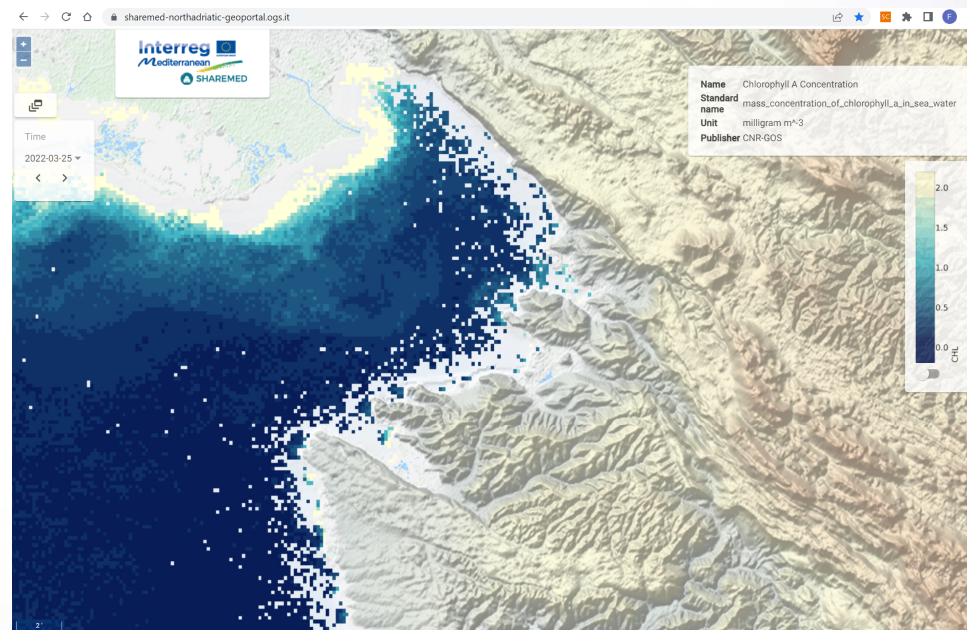
Real time - Surface Current Map from HF - Radar



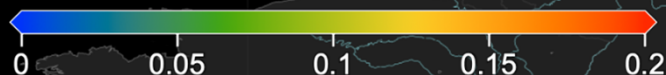


Sea Surface Temperature  
from  
Satellite Images

## Chlorophyll A Concentration from Satellite Images



Mole concentration of phosphate in sea water [mmol/m<sup>3</sup>]



2021 Sep 22, 14:00 UTC - 0 m

1/128°

1/128°

1/128°

1/128°

1/64°

background image  
credit:

*My Ocean*  
by Copernicus Marine Service

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## Northern Adriatic Sea Forecast (beta)

### Forecasts

72 hours forecast of biogeochemical sea water condition - last updated on: 20 Sep 2021 00:00

Phosphate

1 of 16

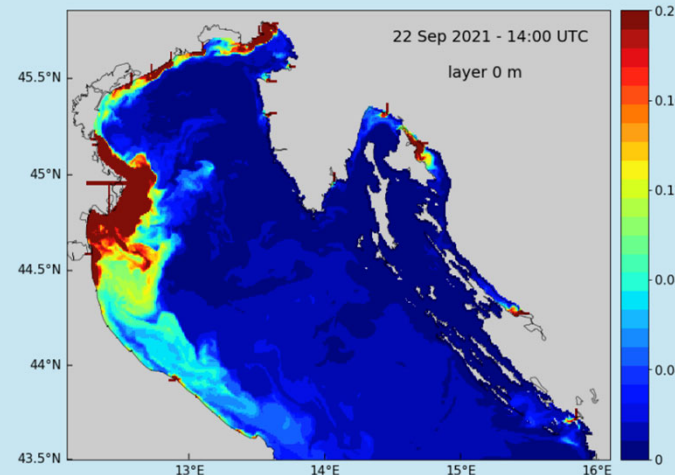
Depth 0m

1 of 5

22/09/2021 - 15:00

63 of 72

phosphate [ mmolP m<sup>-3</sup> ]



Development of a  
relocatable short-term  
forecasting system  
for coastal areas

<http://medeaf.ogs.it/adriatic>

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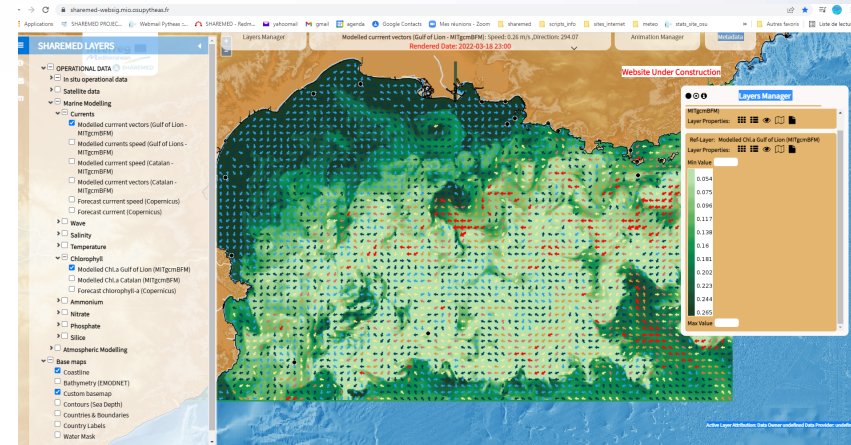
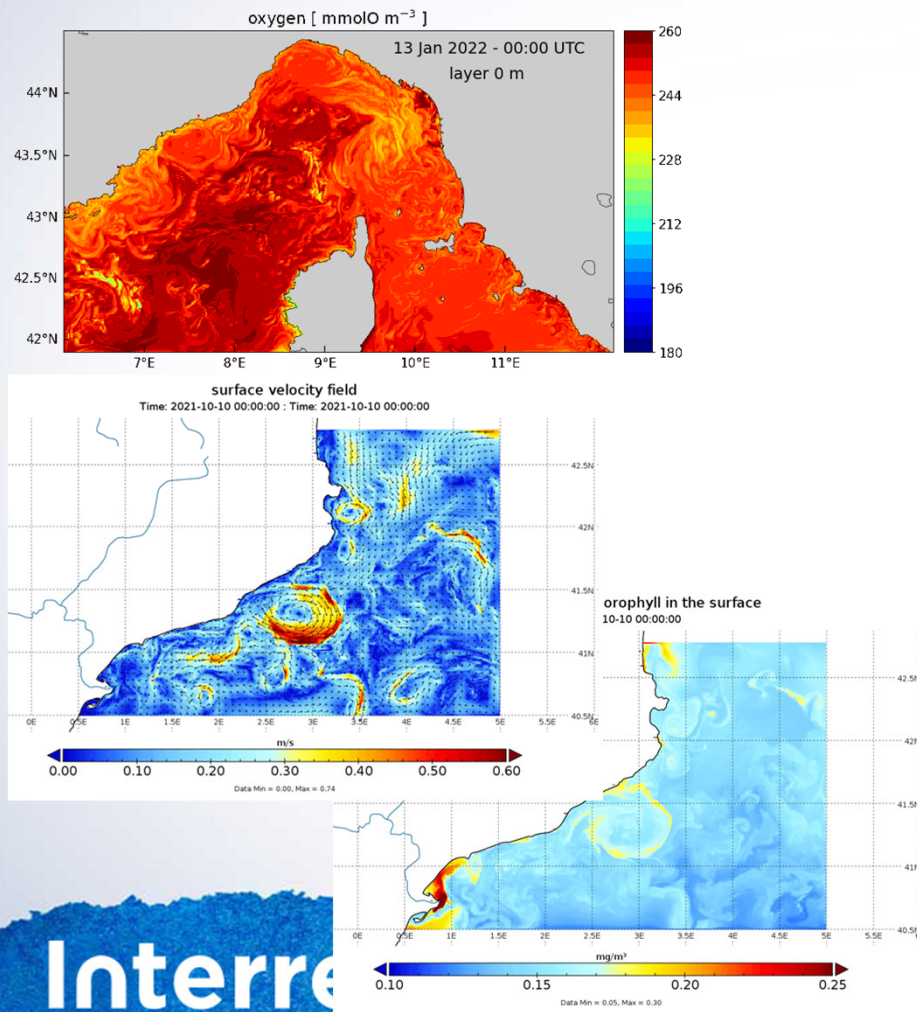


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# SHAREMED: Forecast system in North-west Mediterranean Pilot site (WP 5.1)

## Operational physical-biogeochemical modelling on Gulf of Lion



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# *Atlas of ecosystem status, pressures and hazard index*

PRESSURES

HAZARD

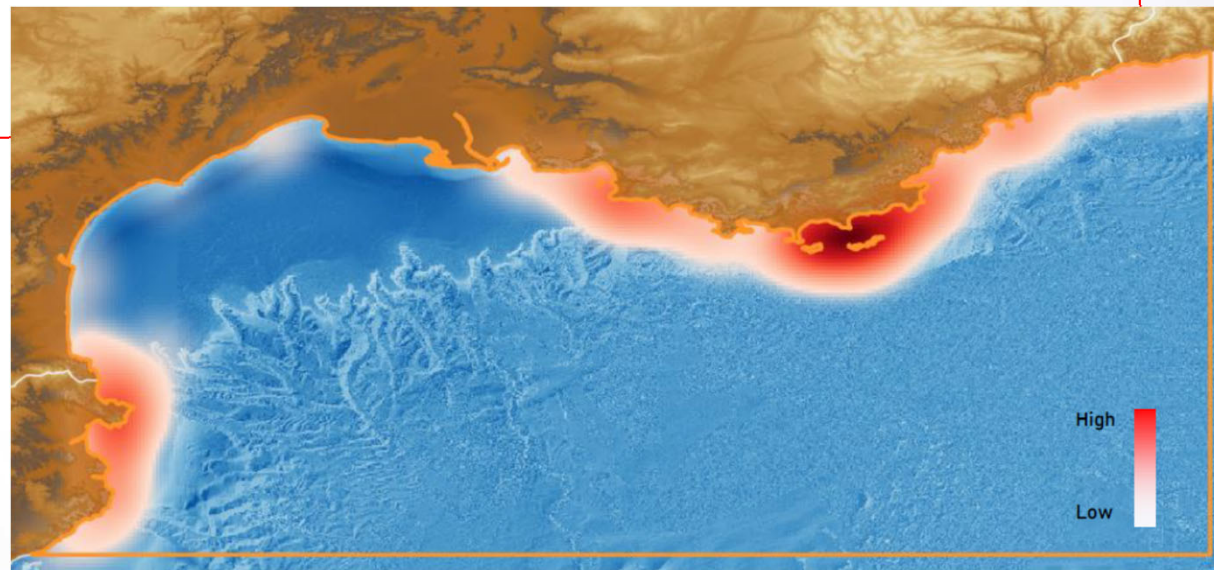
EXPOSURE

VULNERABILITY

RISK

- Oil spill hazard from main shipping routes
- Potential hazard from major rivers discharge
- Thermal shocks and occurrence of marine heatwaves
- Distrophic events
- Chemical contamination

**risk map based on  
layers including  
location of ghostnets,  
MPA, habitats**



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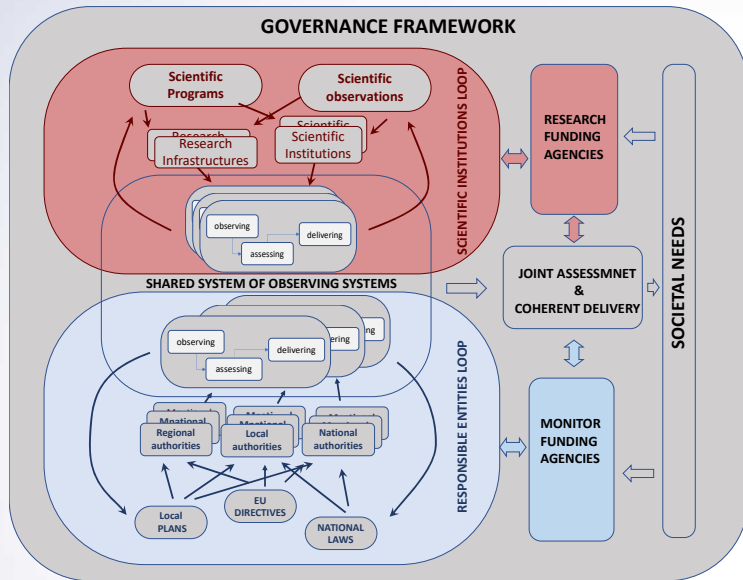


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# ALL GOODS?.....

## ..... LESSON FROM **FAILURES**



*NO (signed) PROTOCOL/MOU FOR:*

- *JOINT ASSESSMENT*
- *JOINT DELIVERY*
- *JOINT MANAGEMENT*

*«easy» to harmonize agenda  
difficult to align objective  
impossible to share ownerships*

*need to EMPOWER the table*

*separate funding channels*

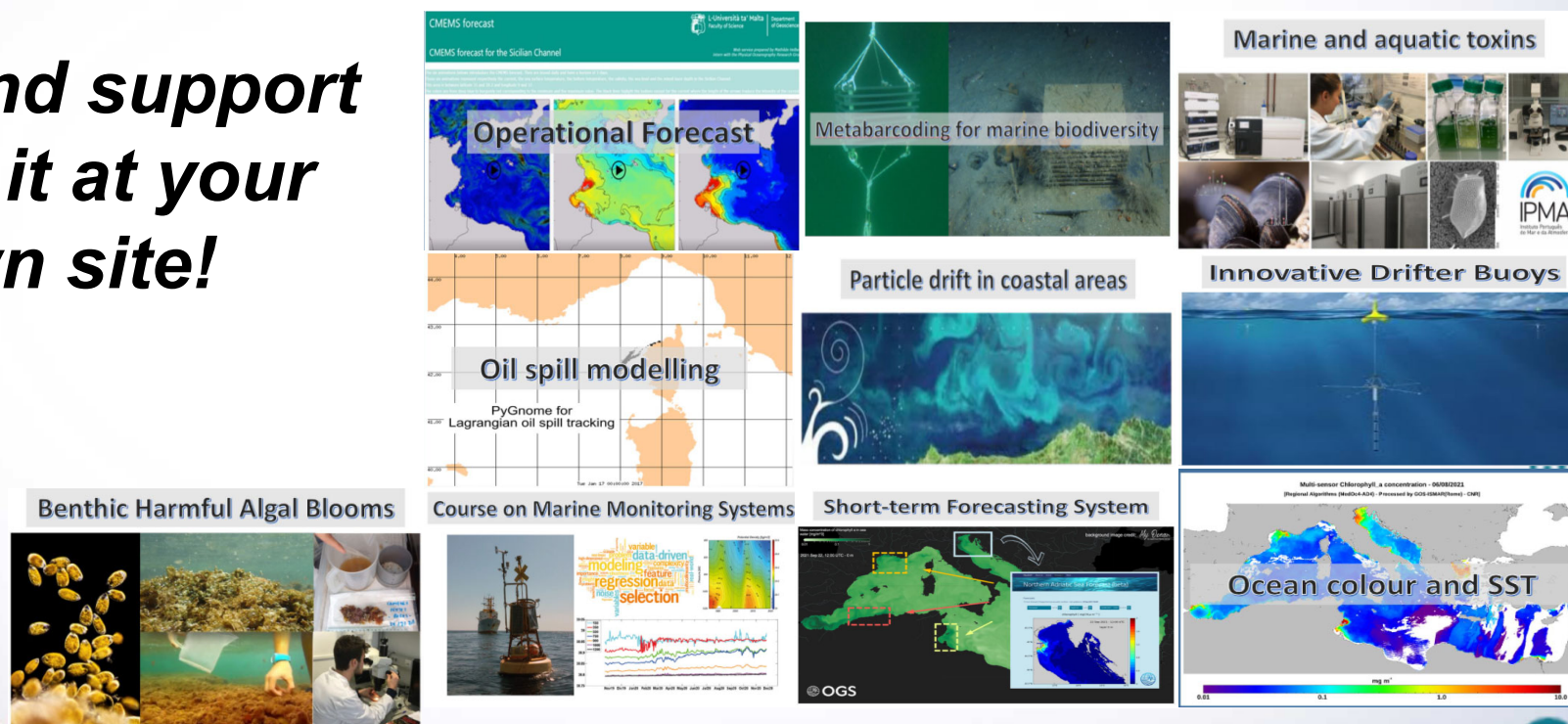
*(need to have a single agency?)*

*need to sustain the activity for a  
LONGER period, so to showcase results*

# Transnational on demand actions

***IMPLEMENT A SHAREMED RESULT IN YOUR SITE:  
on demand trans national access***

***fund and support  
to try it at your  
own site!***





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