



EU MISSION

'Restore our Ocean and Waters by 2030'

European Digital Twin of the Ocean (EU DTO)



*EMB Plenary Open Session
25/04/2024*

#MissionOcean #EUDTO #HorizonEU

EU DTO: the EC Vision



PROTECT AND RESTORE MARINE AND FRESHWATERS ECOSYSTEMS AND BIODIVERSITY

PREVENT AND ELIMINATE POLLUTION OF OUR OCEANS, SEAS AND WATERS

MAKE THE BLUE ECONOMY CARBON-NEUTRAL AND CIRCULAR

Cross-cutting enablers for the mission:

- Digital Ocean and Water knowledge system
- Public mobilisation and engagement



“Today, we know the ocean is vulnerable and is threatened by our misdeeds. Pollution, chemicals and the overexploitation of marine resources. The ocean is too large for any one of us, and yet so fragile that our individual actions matter. ...

*... Every problem is an opportunity for innovation. But we need a clear and ambitious objective. We need a mission, like the European Green Deal. **That is why we have launched the ‘Mission to restore our ocean and waters by 2030’** ...*

*... Finally, the ocean is still largely a great mystery for humankind. **That is why Europe is building a digital twin of the ocean.** We are connecting our assets – like the Copernicus satellites, marine infrastructure like icebreakers, buoys and underwater drones, and high-performance computing. We will gather the raw data and turn it into real-time knowledge and longer-term predictions.*

We are putting the power of the digital revolution at the service of our climate. ...”

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Atlantic



Coastal zone management

Ocean Climate



Danube



Fishing

Pollution



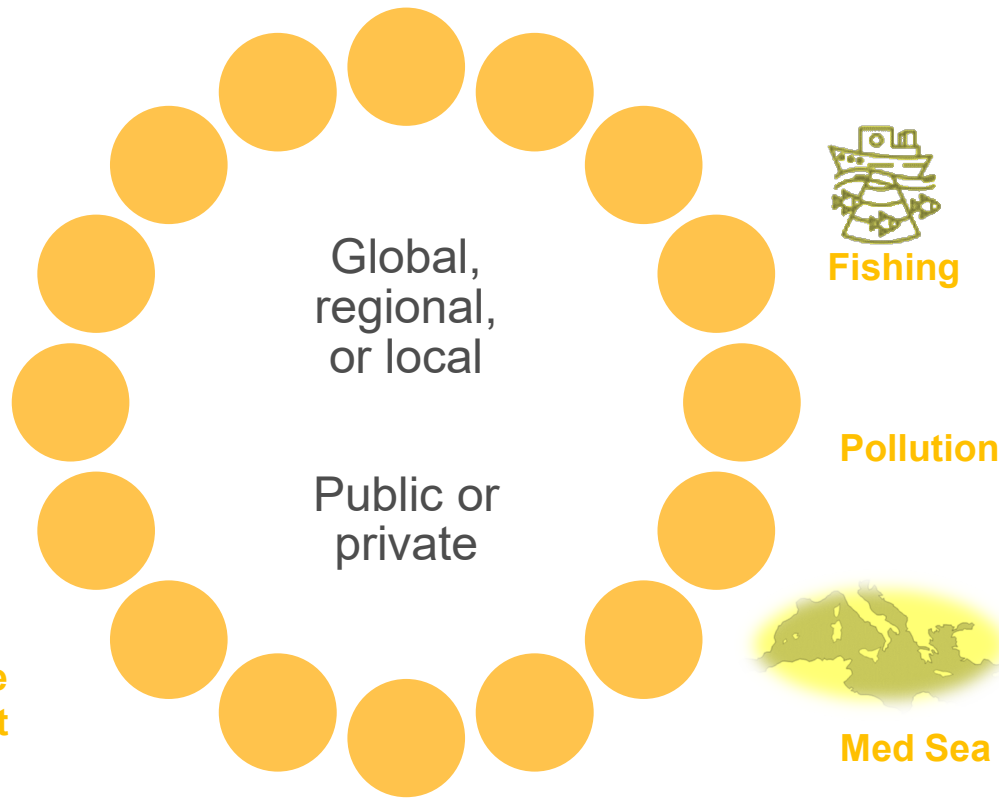
Med Sea



Baltic



Blue economy



Structuring & integrating the ocean knowledge value chain **FOR** ocean actors

TO:

- Support science-driven approaches to policies implementations by users: ecosystem-based management of marine habitats/green infrastructure, planning and management of marine areas, safeguard productivity and biodiversity of marine ecosystems, etc.
- Support industry to develop new business models, sustainable green services, and opportunities in ocean data and related services
- Increase citizen engagement & empowering citizens in innovative co-designed services and projects, enable the infusion of 'non-scientific data streams'

HOW:

- By Integrating and connecting wide range of data and models (from physics to socio-economics) with cloud infrastructures, HPC, AI
- by providing development kits, interfaces and visualization tools for "what-if" scenarios and decision support

« A core infrastructure, conceived as a public good »

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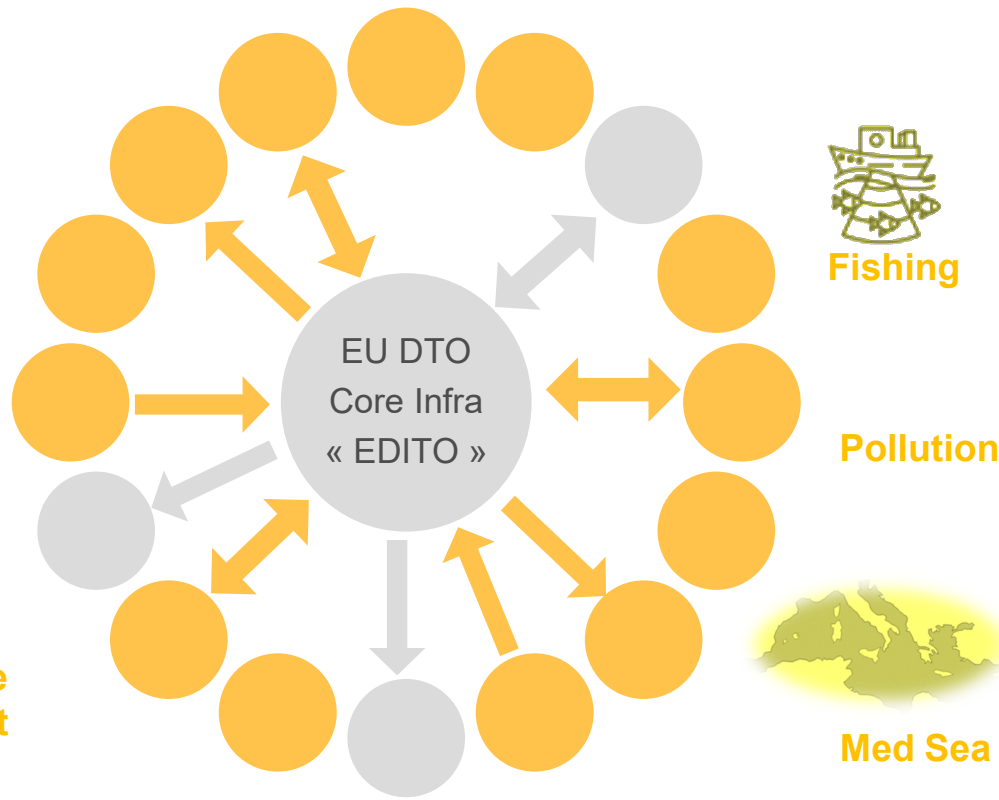


Fishing

Pollution



Med Sea



EU DTO: the EC Vision



Harmonised data

Marine RIs

Other sources of data

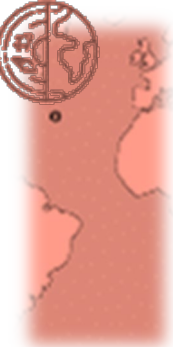
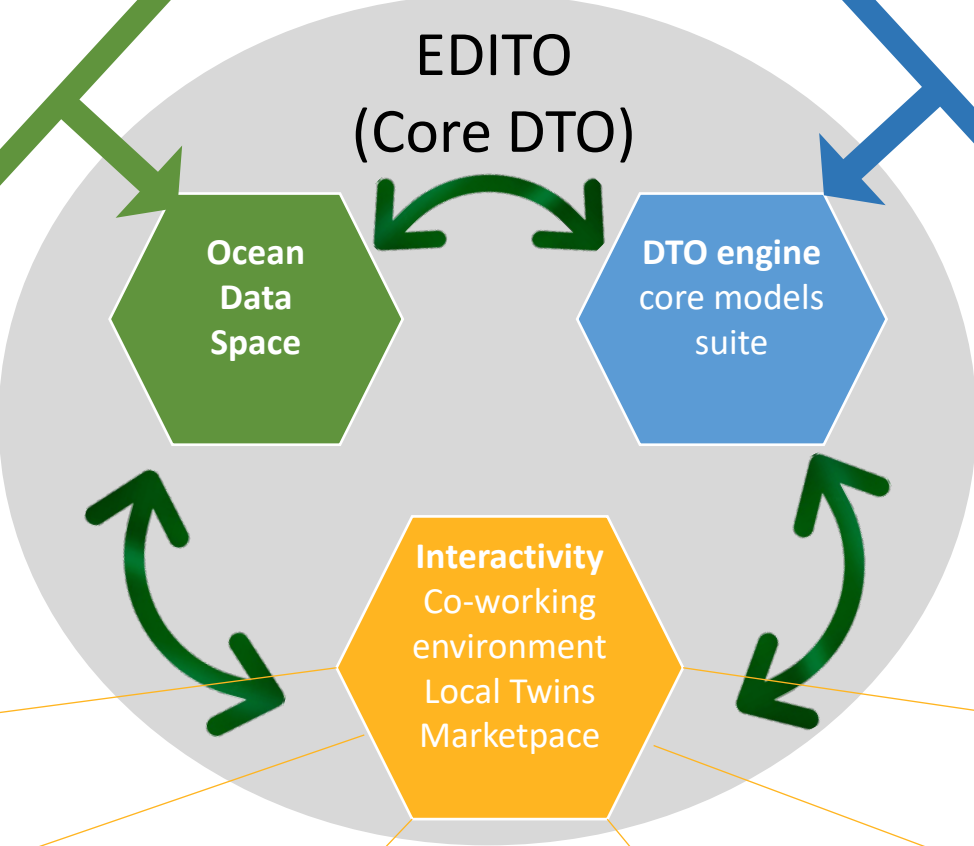
Research, citizen, private and other networks data

Models outputs

Models

Physics, Fisheries, biodiversity

Research → to operations



Ocean Climate

Atlantic



Biodiversity

Med Sea

Pollution

LIGHTHOUSES

Maritime Spatial Planning

Coastal zone management



Blue economy

Danube & Black Sea

Baltic

EU DTO: 3 pillars of action

1. Science-base

(Horizon Europe, national programmes ...)

2. EU Core Infrastructure

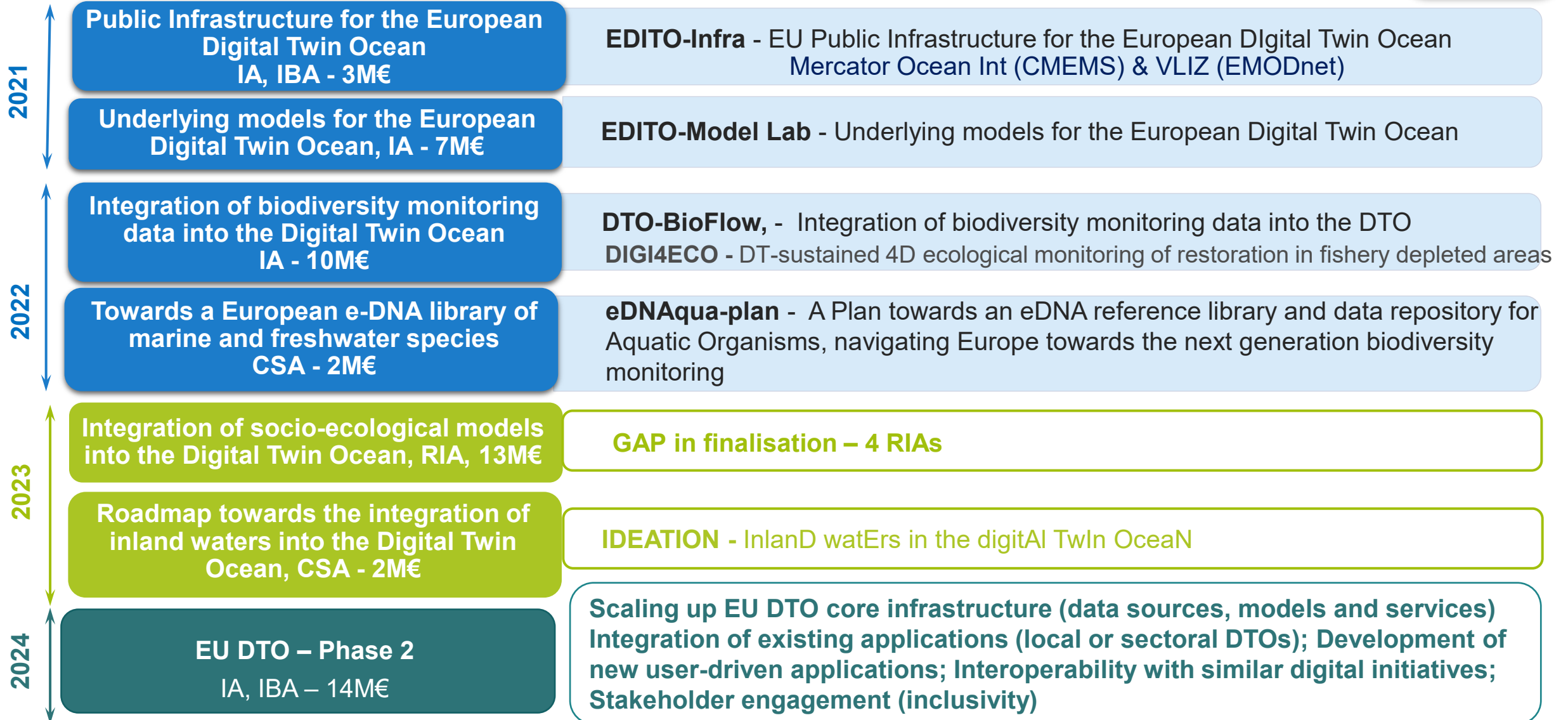
(Mission Ocean WP)

3. EU DTO in the world





2. DTO Core Infrastructure (EDITO) (Mission Ocean WP)



EU DTO: inclusive and open

EDITO follows a co-design and co-development approach

The core EU DTO must:

- be co-developed in collaboration with willing projects and stakeholders
- foster the co-development of local or regional, application-specific, DTOs
- open to interoperability with other similar initiatives

You can ALL contribute

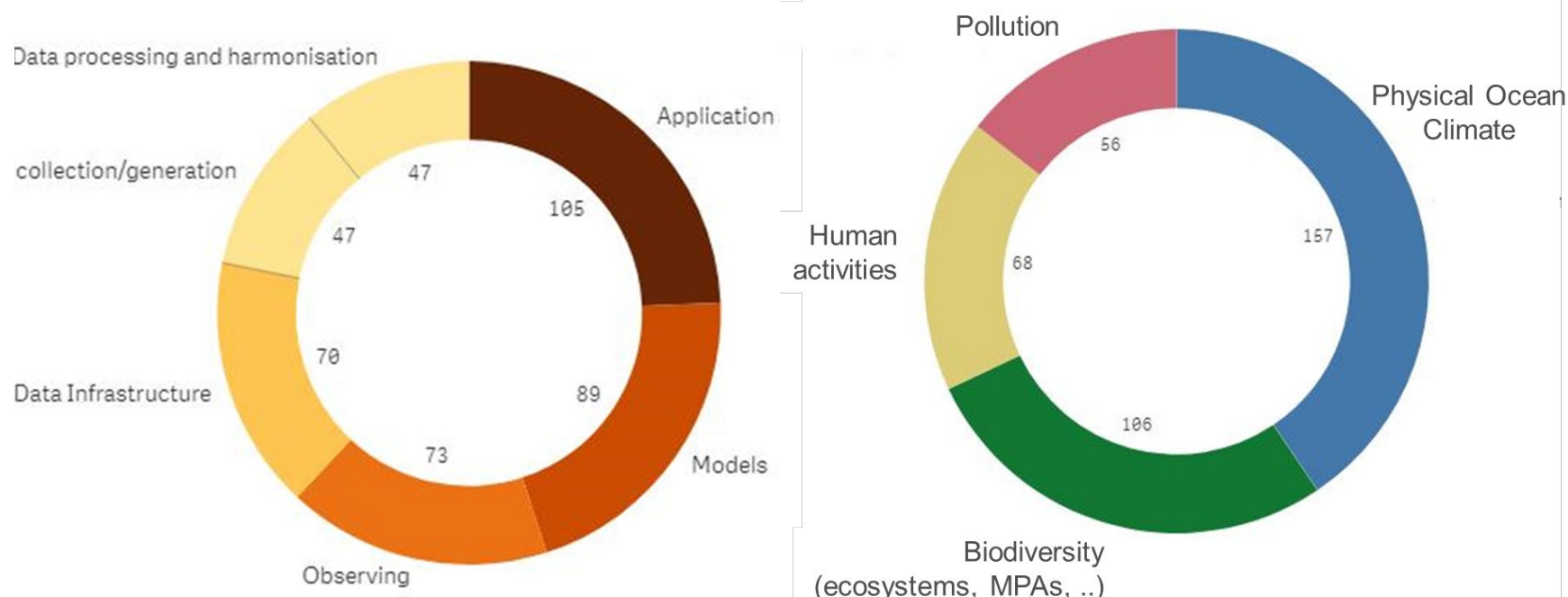
- What will you need from the EU DTO ?
- What can you bring to the EU DTO, and how?

European Digital Ocean Forum

1. DTO Science Base

Sustainable Blue Economy Partnership

EU Programmes : 187 relevant projects (50+ running and linked)



Digital Ocean Forum
14-15 June 2023, Brussels

3. EU DTO in the world

- EU 27 – linking with national initiatives
- UN Decade of Ocean Science for Sustainable Development



- All-Atlantic Ocean Research & Innovation Alliance

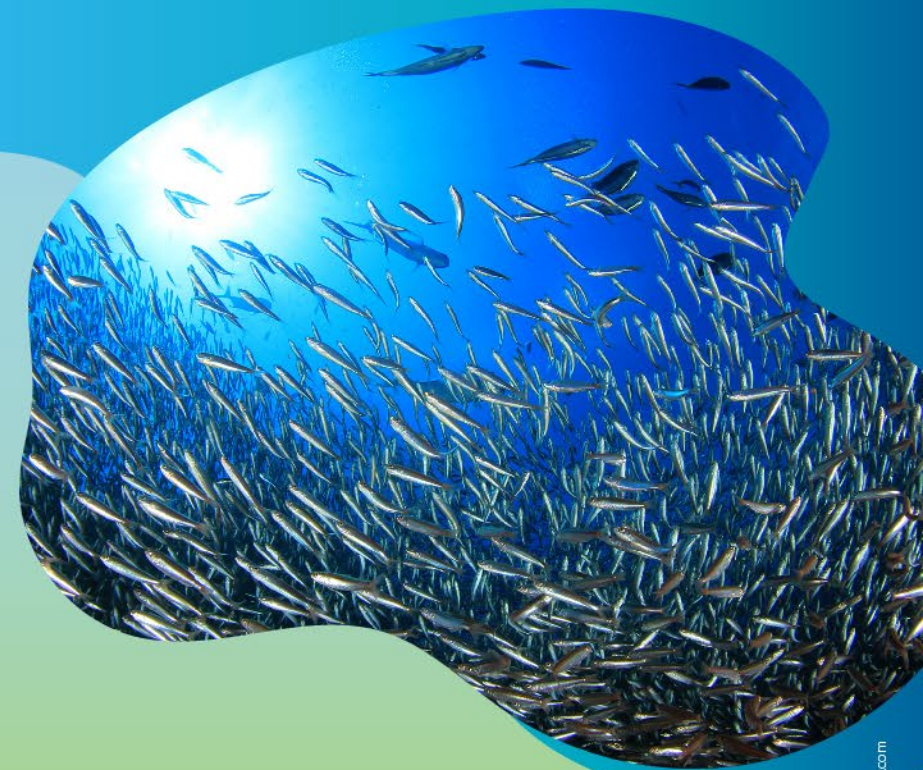


INVITATION



EU MISSIONS

RESTORE OUR OCEAN & WATERS



Digital Ocean Forum #3

Wednesday 12 June, 12:30-18:00

Scientific and Technical Workshop

Brussels, Palais des Académies

Thursday 13 June, 10:00-16:30

High-Level event

Brussels, Palais des Académies



in cooperation with

