



EuroGOOS

European Global Ocean
Observing System



New members:
 3 applications at 2019 GA;
 NIVA, PLOCAN and SHOM

Members leaving:
 DLTM

Possible members:
 Visits to AWI, NIOZ and METU

Some Black Sea Discussions

<http://eurogoos.eu/>



Executive Directors Board

- EuroGOOS activities are managed by the Executive Directors Board, appointed by the General Assembly
- The EuroGOOS Executive Board members are:
 - Dr. George Petihakis
Chair, Hellenic Centre for Marine Research, HCMR, Greece
 - Dr. Henning Wehde
Vice-Chair, Institute for Marine Research, IMR, Norway
 - **Dr. Bernd Brügge**
Member, Federal Maritime and Hydrographic Agency, BSH, Germany
 - **Prof. Urmas Lips**
Member, Estonian Marine Institute, University of Tartu, MSI TUT, Estonia
 - Dr. Rosalia Santoleri
Member, National Research Council, CNR, Italy
 - Dr. Patrick Farcy
Member, French Research Institute for Exploration of the Sea, Ifremer, France
 - Dr. Enrique Alvarez Fanjul
Member, Puertos del Estado, Spain

Exec Board 2019
**2 board positions at this
General Assembly**



EuroGOOS

European Global Ocean
Observing System

EuroGOOS Office



Glenn Nolan

Secretary General
Oversight and Office



Dina Eparkhina

Policy and Communications Officer
EuroGOOS, EOOS, EU projects, EP



Vicente Fernandez

Science Officer
AtlantOS, EuroGOOS, Data, EU projects



Orla Colligan

Administrator
Office support, financial monitoring



Erik Buch

Senior consultant on EU projects
and tenders

4 staff members based in Brussels

Offices provided by BELSPO in Avenue Louise until March 2019

Move to RBINS (near EP) underway



EuroGOOS

European Global Ocean
Observing System

EuroGOOS Structure

BOOS
(Baltic)

ARCTIC
ROOS

MONGOOS
(Mediterranean)

NOOS
(Northwest
shelf)

IBI-ROOS
(Iberia-Biscay-
Ireland)

Working Groups

Data-MEQ

Technology Planning

Science Advisory

Coastal

Task teams

MoU with EMSO

Tide Gauge

Ferrybox

Glider

HF radar

Euro-ARGO

Fixed Platforms

Animal-Borne



EuroGOOS Coastal Working Group



Data:

Unlock access
Convey
requirements

Products:

Requirements;
science and other
Inventory
Fitness for purpose

**Sustained
observations:**

Funding
Gaps

Modelling:

Future priorities
Assimilation
Hydrology

INSPIRE:

Recommendations
Inventory



EuroGOOS

European Global Ocean
Observing System

Coastal Working Group Members



Coastal WG Kick Off Meeting, 9th May 2018, Brussels

Chair: Ghada El Serafy (Deltares, Netherlands)

Co-chair: Anna Rubio (AZTI, Spain)

Members

Joaquin Tintore (SOCIB, Spain)

Laura Ursella (OGS, Italy)

Federico Falcini (CNR, Italy)

Arthur Capet (Uni Liege, Belgium)

Joanna Staneva (HZG, Germany)

Tomasz Dabrowski (Marine Institute, Ireland)

Francisco Campuzano (IST, Portugal)

Jun She (DMI, Denmark)

Paloma de la Valee and Sebastien Legrand (RBINS, BE)

Bruce Hackett & Oyvind Saetra (Met Norway)

Veronique Creach (Cefas, UK)

Ivane Pairaud (Ifremer, France)

Marina Tonani (UK MetOffice)

Angelique Melet (Mercator Ocean, FR)

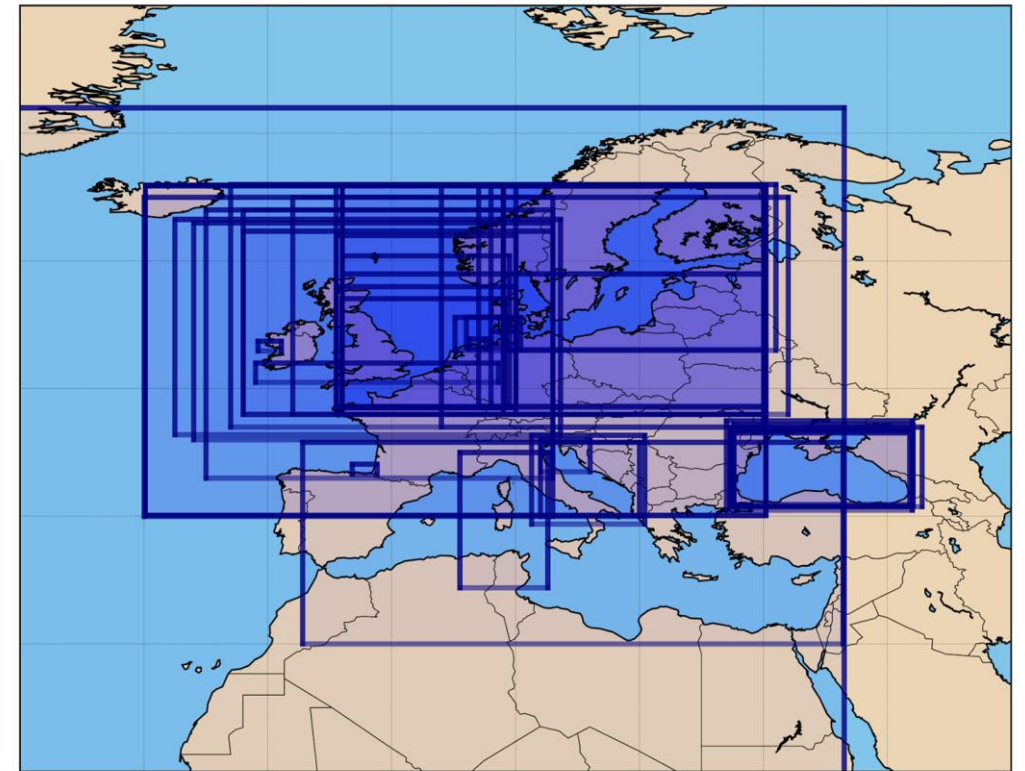
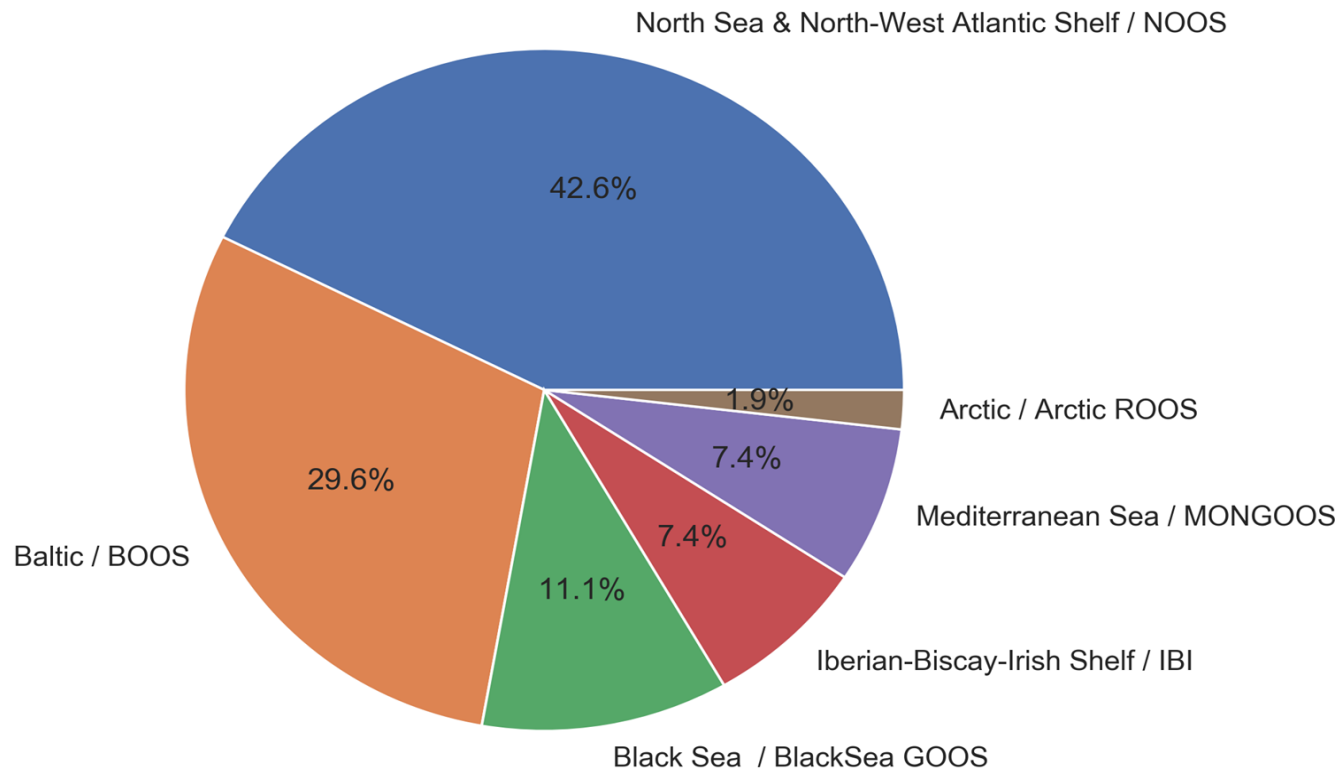
Sonja Wanke (Deltares, Netherlands)

EuroGOOS Office



Participation

48 Answers from 25 Institutes



EuroGOOS EU Projects and Tenders

EU projects:

- **AtlantOS**
- INTAROS
- **EMODnet 3**
- **JERICO-Next**
- **ENVRI Plus**
- **SeaDataCloud (advisory in next phase)**



Tenders:

- **Mercator Ocean**
- **EEA (entering phase 3)**
- **INSTAC**
- **Data ingestion**

<http://eurogoos.eu/projects/>



EuroGOOS EU Projects in planning

EuroSEA; BG7 observations and forecasting

EuroGOOS involved in
governance and comms
activity

Many ROOSs involved
(12)

<http://eurogoos.eu/projects/>

JERICO 3:

Proposal submitted

EuroGOOS in sustainability
and communications WPs

Other projects:

Mercator (discussions ongoing)

EEA (SC3 from Jan 2019)

SDC 2 advisory

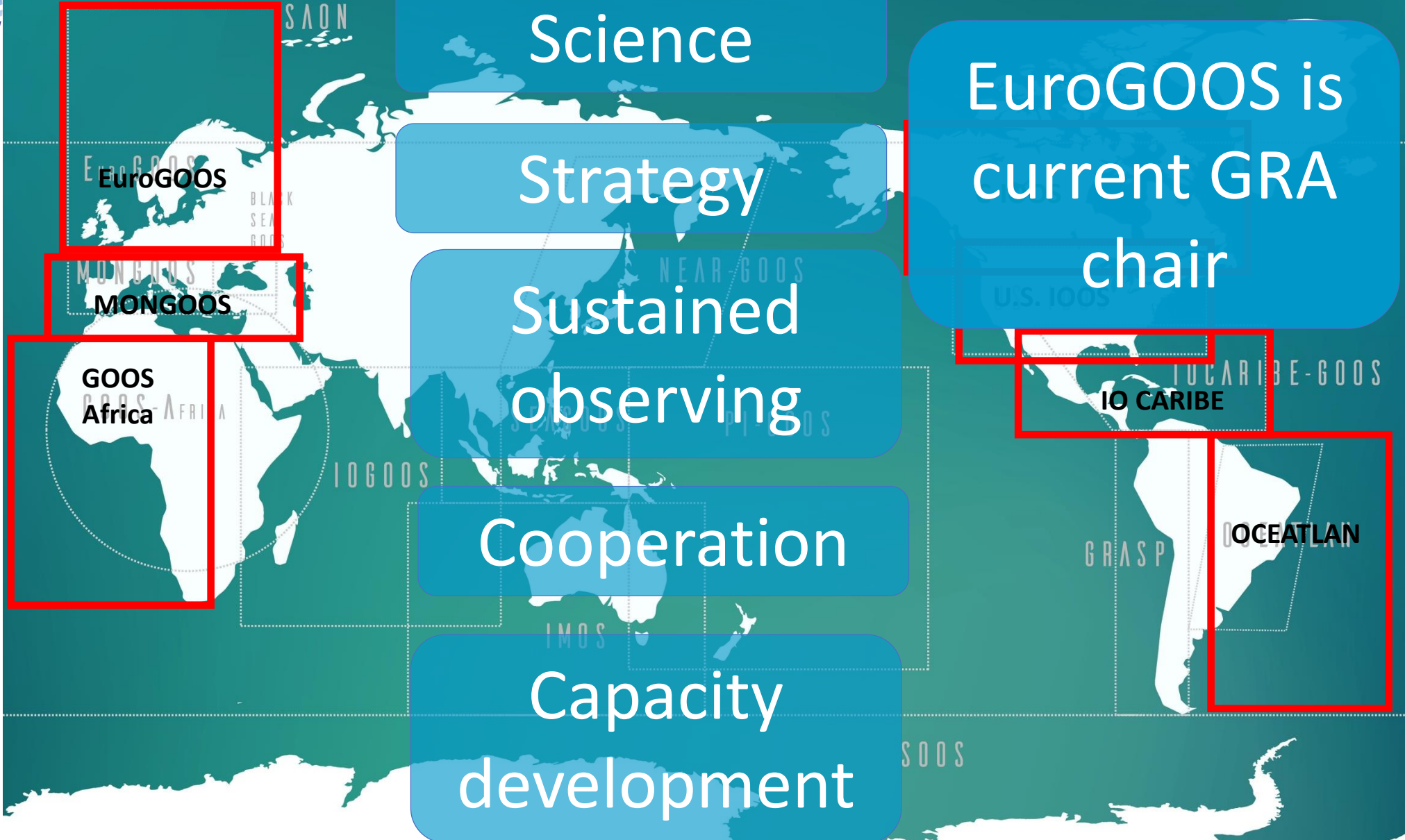
NEURONE (In-situ requirements)

FORCOAST (CWG)





THE GLOBAL OCEAN OBSERVING SYSTEM, GOOS, REGIONAL ALLIANCES



Science

Strategy

Sustained observing

Cooperation

Capacity development

EuroGOOS is current GRA chair



EuroGOOS

European Global Ocean
Observing System





Example of data requirements in CIS²

Requirements for ocean data						
Name	Group	Uncertainty	Update Frequency	Timeliness	Horizontal resolution	Vertical resolution
Sea Surface Salinity	Ocean	Threshold: 0,1psu Breakthrough: 0,07psu Goal: 0,05psu	Threshold: 72d Breakthrough: 24d Goal: 6d	Threshold: 3d Breakthrough: 2d Goal: 1d	Threshold: 25km Breakthrough: 10km Goal: 5km	
Sea surface Temperature	Ocean	Threshold: 0,5K Breakthrough: 0,2K Goal: 0,1K	Threshold: 3d Breakthrough: 24h Goal: 6h	Threshold: 3h Breakthrough: 2h Goal: 1h	Threshold: 25km Breakthrough: 10km Goal: 5km	
Subsurface currents	Ocean	Threshold: 50cm/s Breakthrough: 20cm/s Goal: 10cm/s	Threshold: 3d Breakthrough: 1d Goal: 6h	Threshold: 3h Breakthrough: 2h Goal: 1h	Threshold: 100km Breakthrough: 50 km Goal: 10km	Threshold: 50m Breakthrough: 10m Goal: 1m
Subsurface salinity	Ocean	Threshold: 0,1psu Breakthrough: 0,07psu Goal: 0,05psu	Threshold: 12h Breakthrough: 3h Goal: 1h	Threshold: 1d Breakthrough: 6h Goal: 3h	Threshold: 30km Breakthrough: 5km Goal: 1km	Threshold: 100m Breakthrough: 10m Goal: 1m
Subsurface temperature	Ocean	Threshold: 1k Breakthrough: 0,5k Goal: 0,1k	Threshold: 24d Breakthrough: 3d Goal: 1d	Threshold: 3d Breakthrough: 1d Goal: 12h	Threshold: 50km Breakthrough: 10km Goal: 2km	Threshold: 50m Breakthrough: 10m Goal: 1m
Surface currents	Ocean	Threshold: 20cm/s Breakthrough: 10cm/s Goal: 5cm/s	Threshold: 3d Breakthrough: 1d Goal: 12h	Threshold: 3d Breakthrough: 1d Goal: 6h	Threshold: 20km Breakthrough: 5km Goal: 1km	





General meeting conclusions

- **Consolidation and sustainability** of the global and regional in-situ observing systems remain a strong concern. There are critical sustainability gaps and major gaps for biogeochemical observations (carbon, oxygen, nutrients, chl-a). New mechanisms need to be set up between the EU and member states to address them.
- To follow the evolution of ocean general circulation models in term of spatial resolution, which in future will reach the kilometric scale at global level, there is a **clear need of more sensors deployed at global and regional scale.**
- In terms of platforms, **consolidation of the Argo core mission** (T&S–0–2000 m) including the sampling of polar seas and marginal seas and developing its **two major extensions (BGC Argo and Deep Argo)** is a strong priority at global and regional level. Nowadays Argo is the key in-situ sensor for operational oceanography, providing thousands of daily measurements of ocean physics and progressively becoming the main source of biogeochemical observations in the open seas.
- **Timeliness** is also an important parameter to be improved, to ensure that **data are available at each model run;** this is particularly important for coastal applications where ocean dynamics evolve on a rather short time.



General meeting conclusions

- Improving ROOSs (Regional Ocean Observing Systems) and key observing systems such as ferry-boxes, gliders, tide gauges and HF Radars are strong priorities for regional CMEMS products.
- A **specific effort for the Arctic region** is needed; there are severe limitations with measurements over the seasonal ice zone, which is growing broader and none of the platforms available today can collect data there. More core and BGC Argo floats are needed. IMB buoys are needed to measure ice thickness and snow depth that is critical for remote sensing algorithm calibration and validation.
- **Data harmonization and their access need to be improved as well**; specifically, data sampling, transmission, calibration, processing, archiving and retrieval of required variables shall be improved, using distributed and connected databases.
- Development of a **dedicated network able to collect Fiducial Reference Measurements** for all the ocean variables estimated by the Copernicus Satellite component is also important for CMEMS, since these data are also used for the development of new products and their validation.

Thematic projects

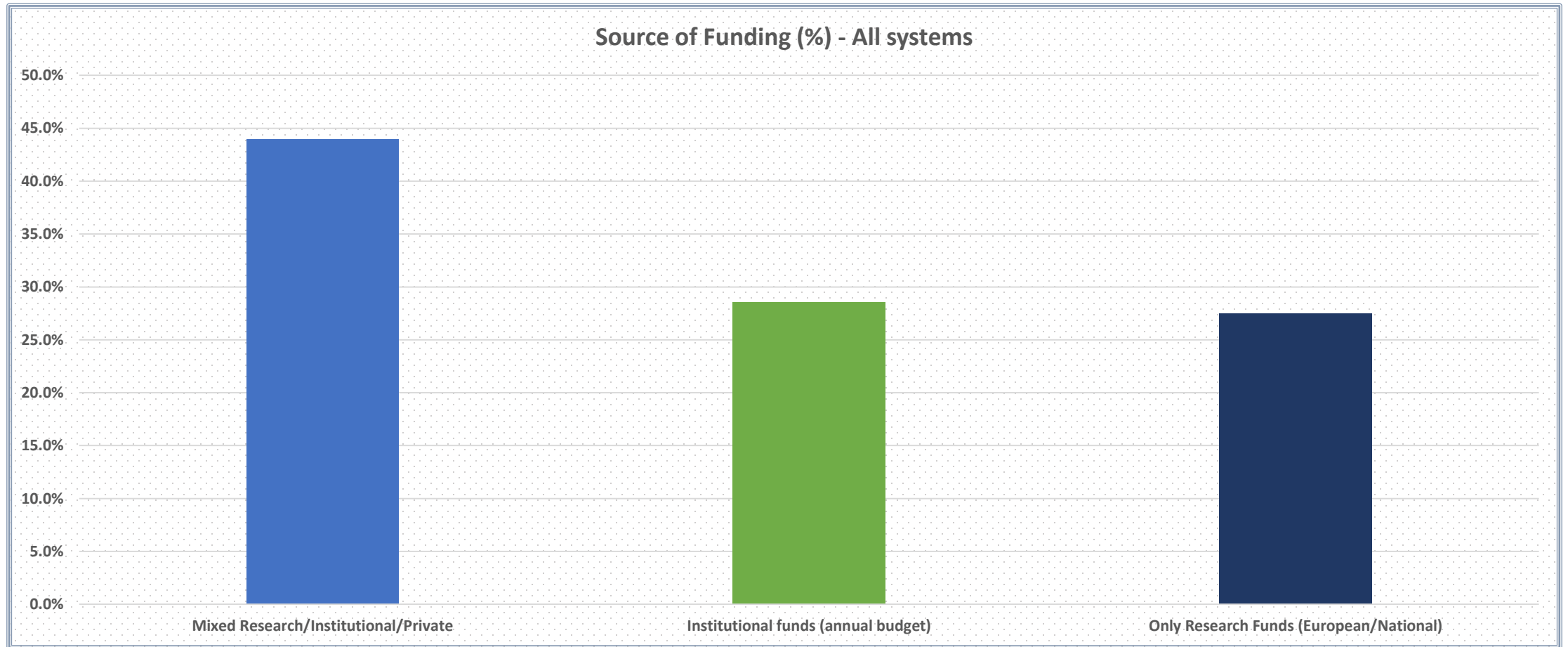
Thematic studies are carried out on-demand in response to specific requests from the European Commission or the EEA. Thematic studies usually take the form of in-depth analyses of critical data, observations, and products, and they may address topics such as observation types, relevant standards, data quality, data policy, availability and application of data access technologies, e.g. data services and information systems, data formats, and data processing methodologies.

The following thematic studies are currently running:

- **Usage of in situ data in the Copernicus Space Component;**
- **Research Infrastructures and Copernicus;**
- **Sustainability of existing in situ system**
- **Dialog with H2020 research projects on the design of in situ observation systems; and**
- **Engagement with the World Meteorological Organisation**
- **Engagement with IOC**
- **Data Delivery options**

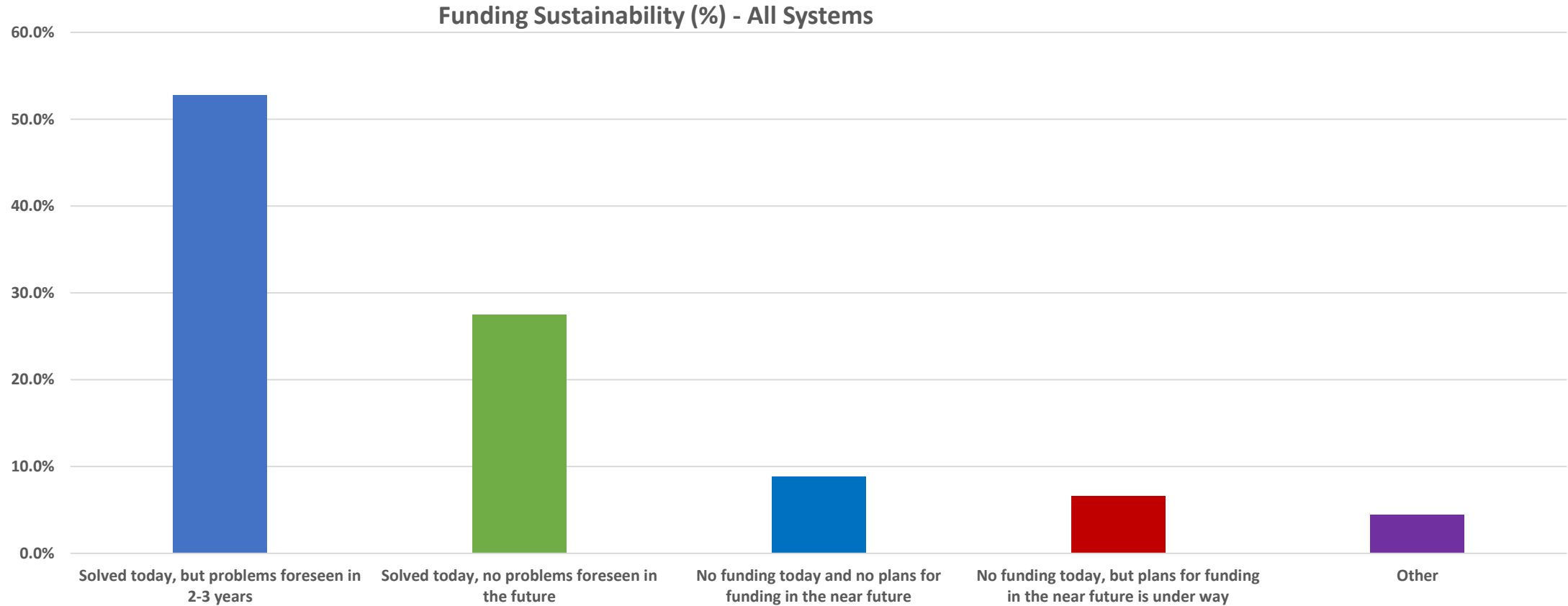


Source of funding





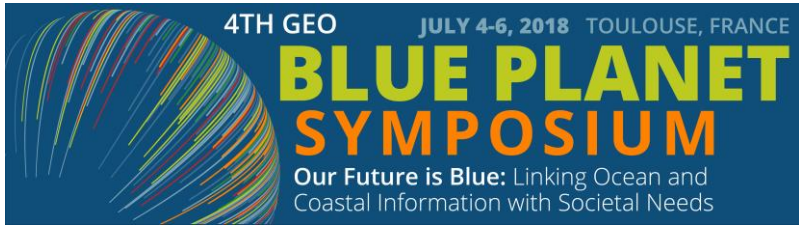
Sustainability all systems





Funding Source – ocean and meteorology

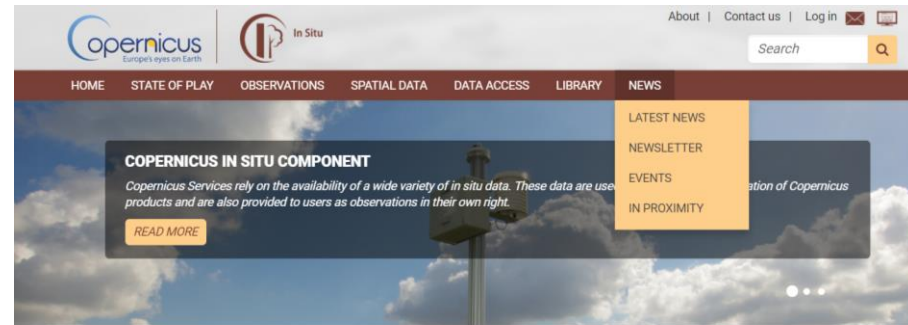
Funding source	Ocean	Meteo.	Atm. composition
Institutional funds (annual budget)	28.6%	73.0%	45,0%
National research fund	15.4%	4.1%	
EU Research Funding	4.4%	0.8%	
Institutional funds (annual budget), National research fund	8.8%	5.7%	25.0%
Institutional funds (annual budget); EU Research Funding	3.3%	5.7%	
Institutional funds (annual budget); National research fund; EU Research Funding;	7.7%	0,8%	15.0%
Institutional funds (annual budget) + various combinations of external funding	9,9%	4.9%	15.0%
National research fund; EU Research Funding	7.7%	0.8%	
Various combinations of external funding	14.2%	4.2%	



- NOOS and Arctic ROOS meetings
- DATAMEQ
- Coastal WG
- Members, ROOS and Chairs actively involved in the event



EuroGOOS :
Co-organizer
Co-author
Support for Sponsor Committee



EXPLORE THE COPERNICUS IN SITU COMPONENT

Copernicus is the European Union's revolutionary Earth Observation and monitoring programme. Copernicus offers a world of insight about our planet to European and global citizens, public authorities, policy makers, scientists, entrepreneurs and businesses. Copernicus is openly and freely available to everyone at no cost.

Copernicus transforms information from multiple sources, including satellites, into operational services for keeping watch over the planet Earth's land, ocean and atmosphere, monitoring climate change, supporting European emergency management and safeguarding civil security.



EOOS

European
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System

**ALIGNING, INTEGRATING AND
PROMOTING EUROPE'S OCEAN
OBSERVING CAPACITY**

Ocean observing in Europe is done by a multitude of actors at national, regional and pan-European levels.

The EOOS process is mobilising the ocean observing community to build a common strategic vision and a framework for Europe.



Connecting communities



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EOOS Forum, March 2018



EOOS Conference, November 2018

EOOS events Advisory Committee of ocean observation and monitoring stakeholders

Stakeholder consultation, Strategy and Implementation Plan and Call to Action co-design



EOOS Strategy & Implementation Plan



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EOOS Strategy 2018-2022

OCTOBER 2018



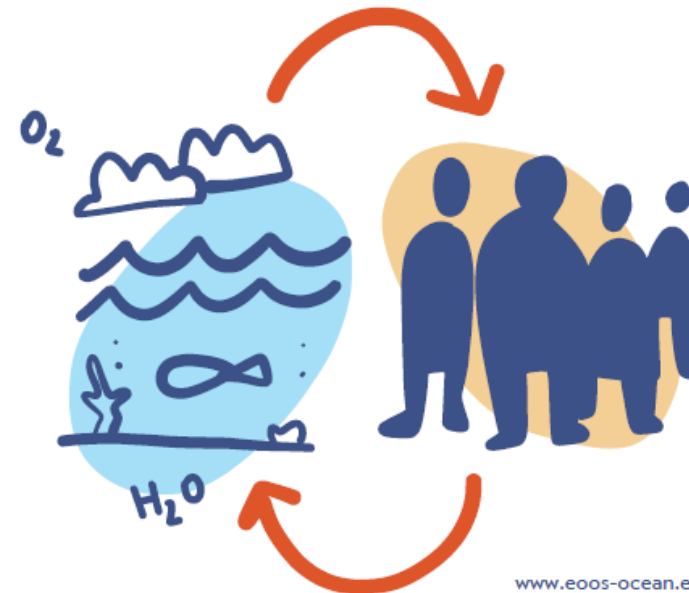
www.eoos-ocean.eu



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Implementation Plan 2018-2022

OCTOBER 2018



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EOOS Conference conclusion



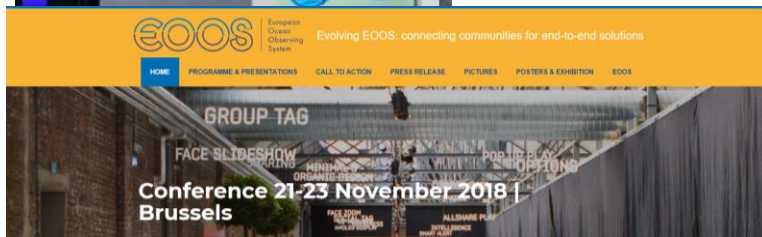
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- **Data collection** - the foundation of the whole marine knowledge value chain;
- **Ocean data** = blue economy enabler & prerequisite for protecting ocean health;
- Ocean science & research only a service to mankind if the **data are made publicly available!**
- Policy drivers and societal challenges: if we have the infrastructures, know-how, networks, mechanisms, etc. to build on what exists already – can we step up to the challenge? Dialogue and coordinate our existing capability to deliver a different approach?

Call to action!



“If we want to build solid, fact-based policies, we need to harness our society for today’s and tomorrow’s challenges, we need to make sure that ocean observations continue [...] cross-sector international collaboration is a must and coordination and sharing is a Commission priority.” Karmenu Vella, EC Commissioner for DG MARE



EOOS pilot projects



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AtlantOS deliverable 10.1: European policy context and timeline for ocean observations

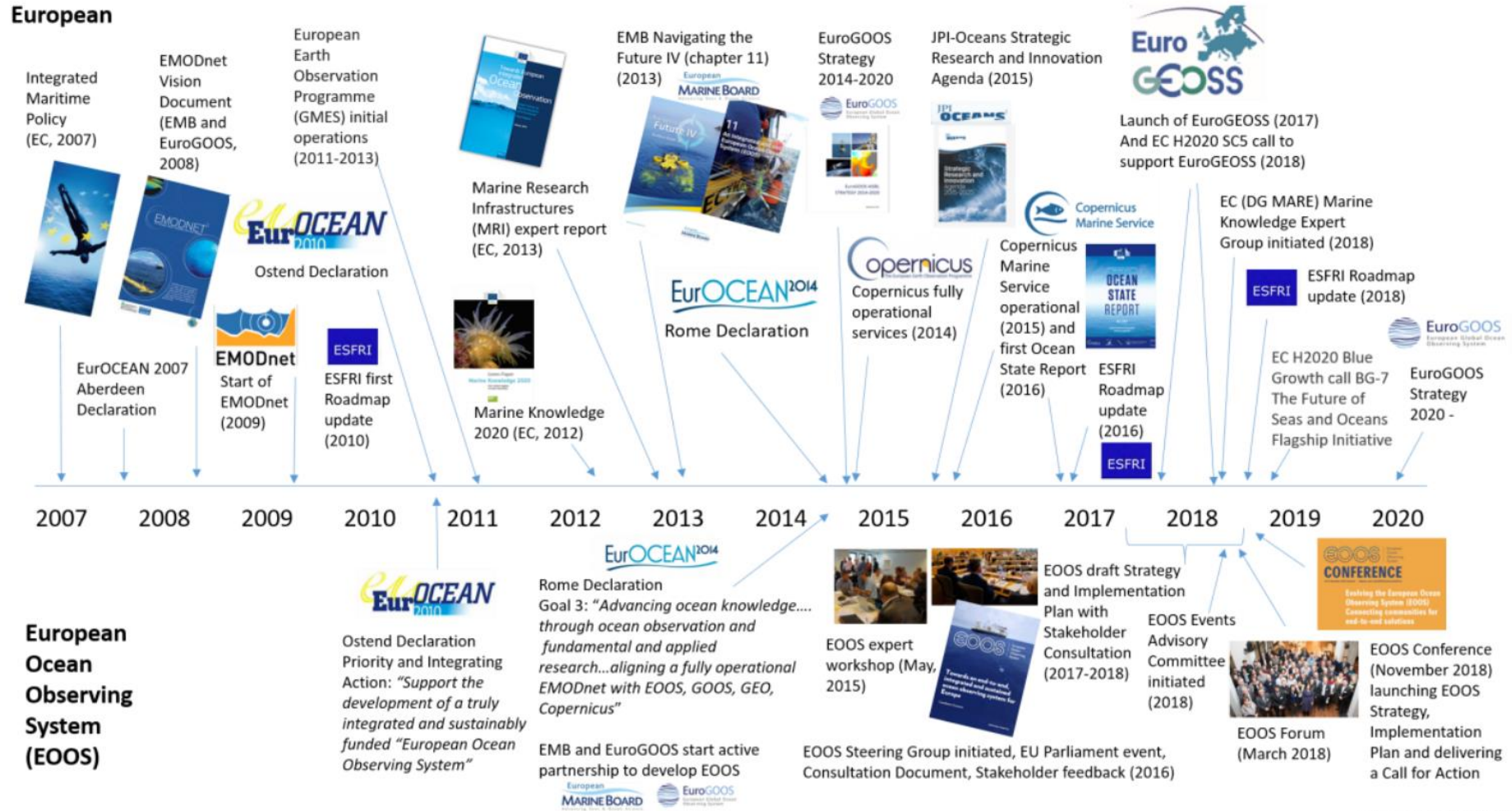
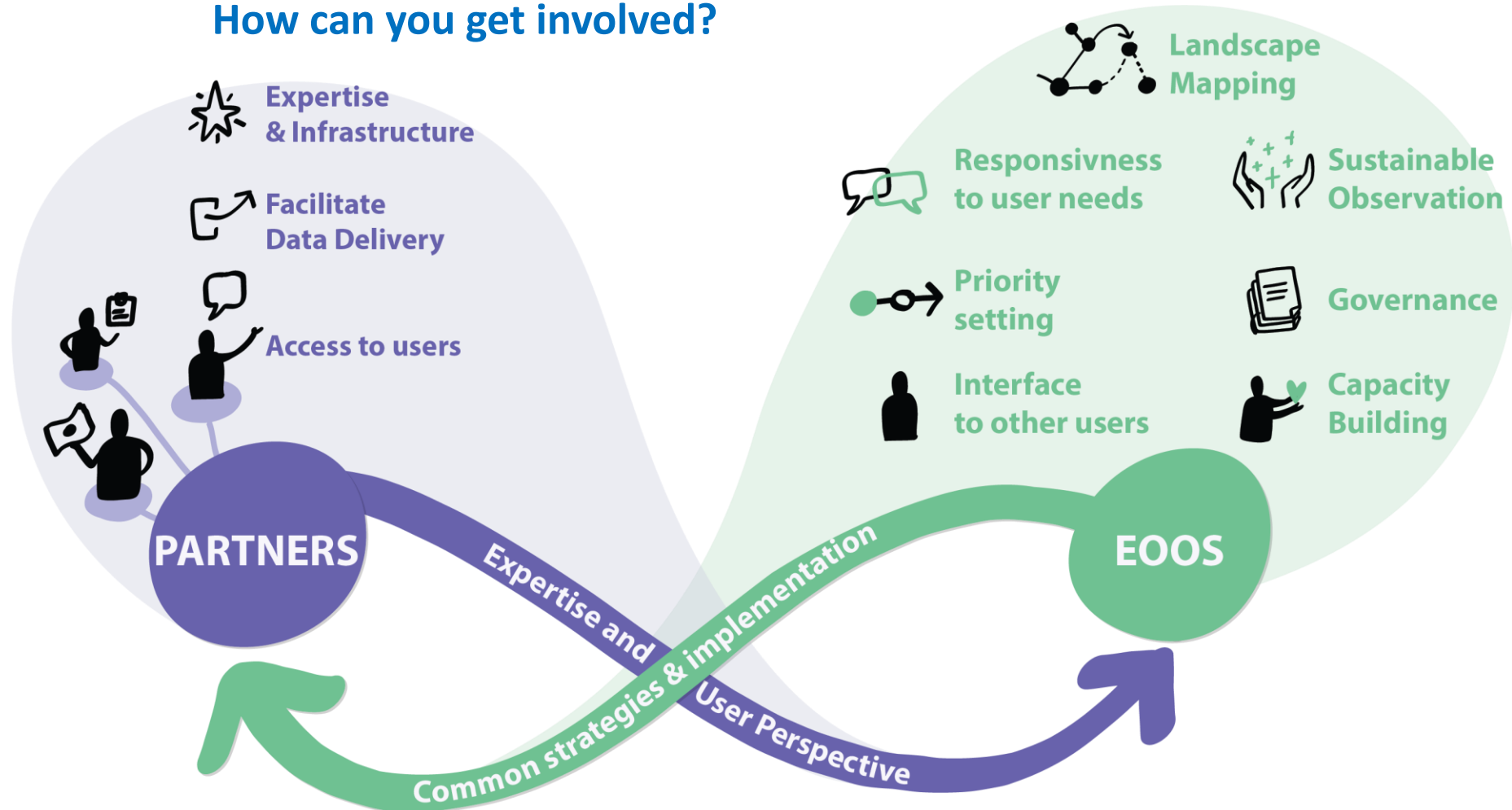
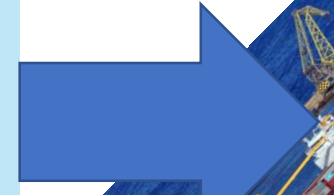
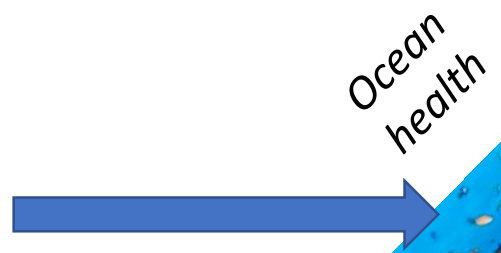
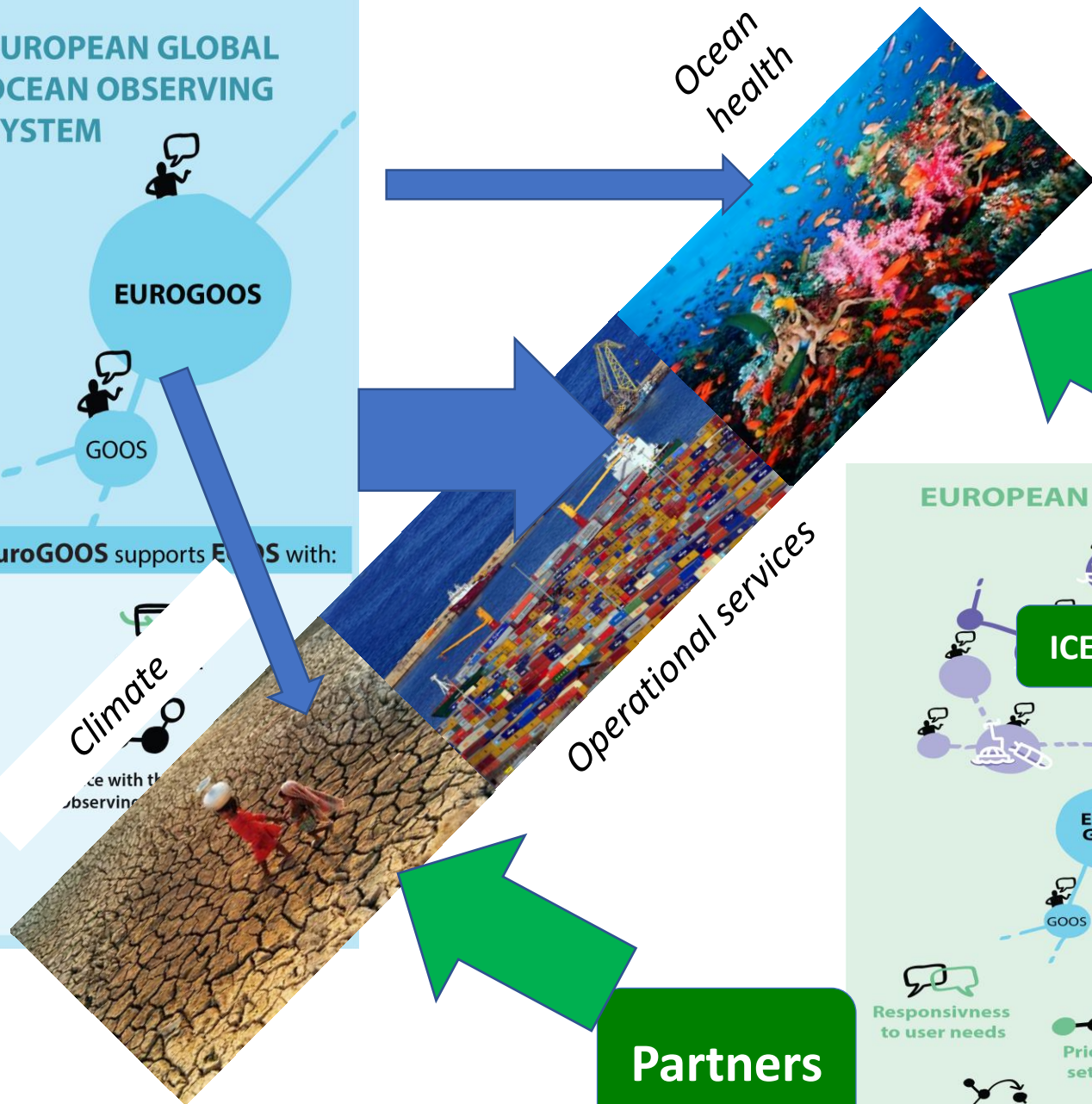
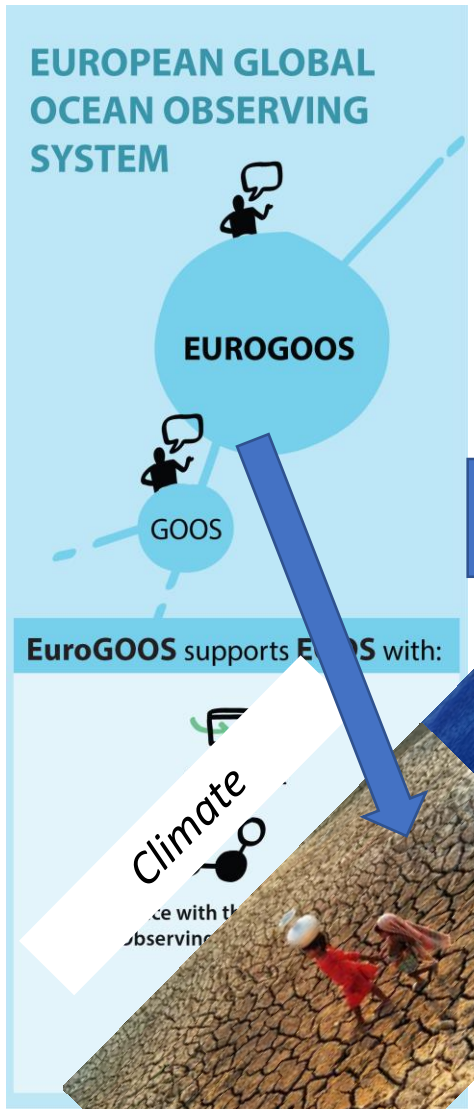


Figure Credit: EMB

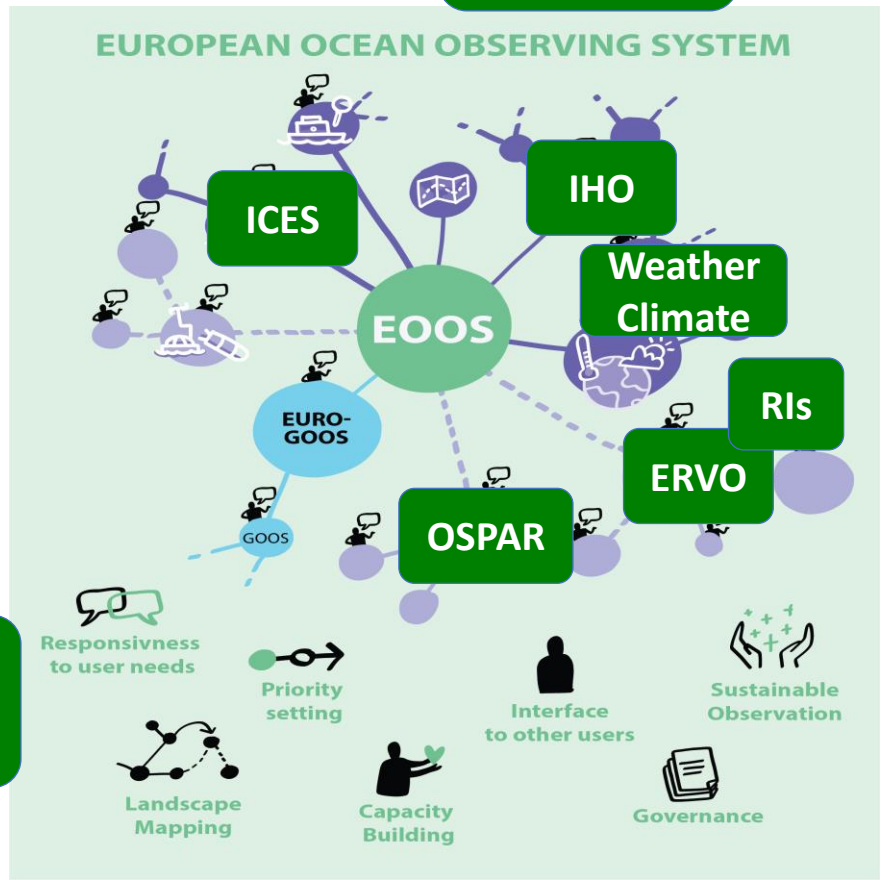
How can you get involved?





Partners

Partners



GOOS Focal Points Europe

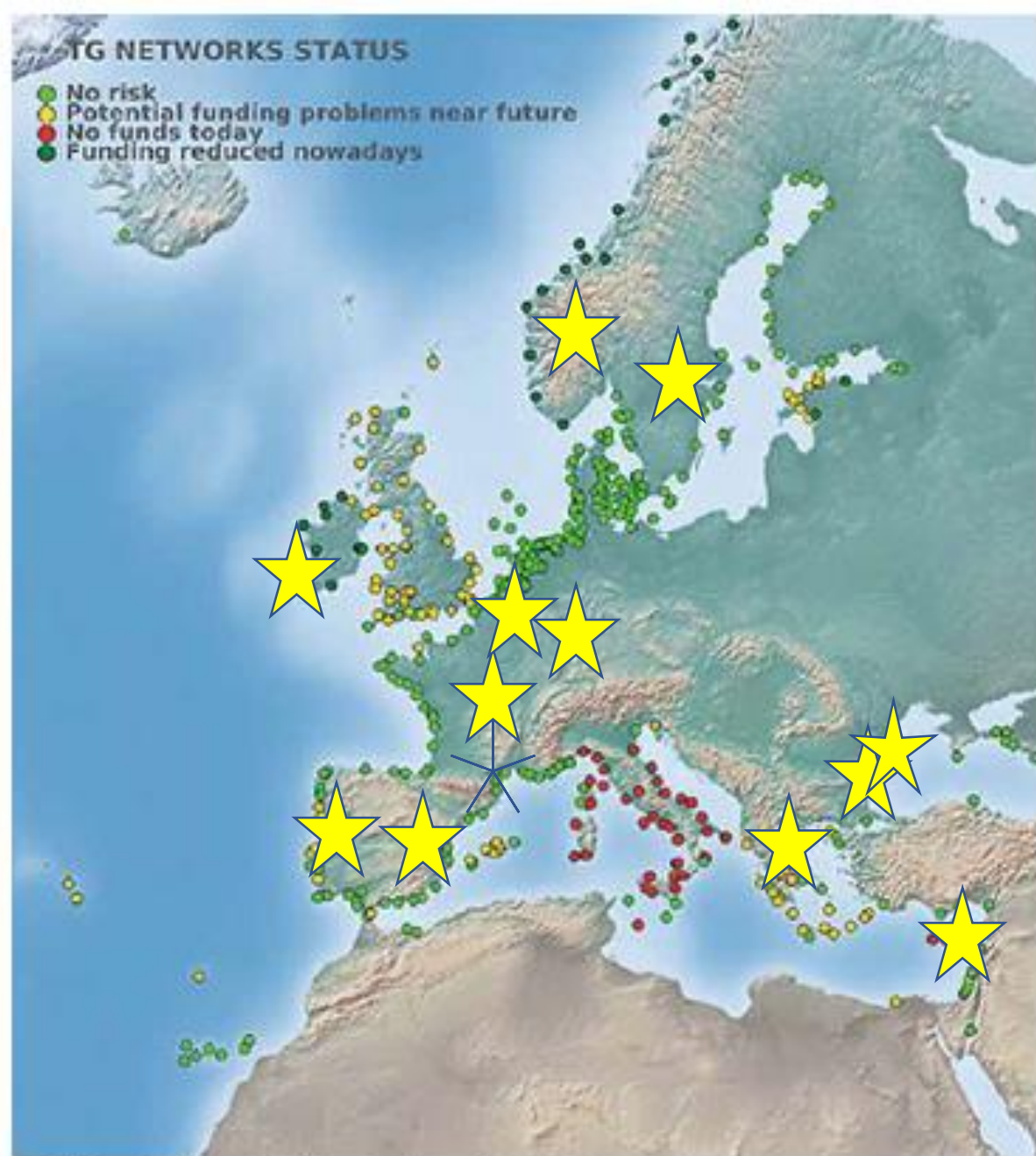


Figure 1: Funding status of tide gauge stations in the regions of European interest according to the responses from national contacts collected by the EuroGOOS Tide Gauge Task Team in 2016

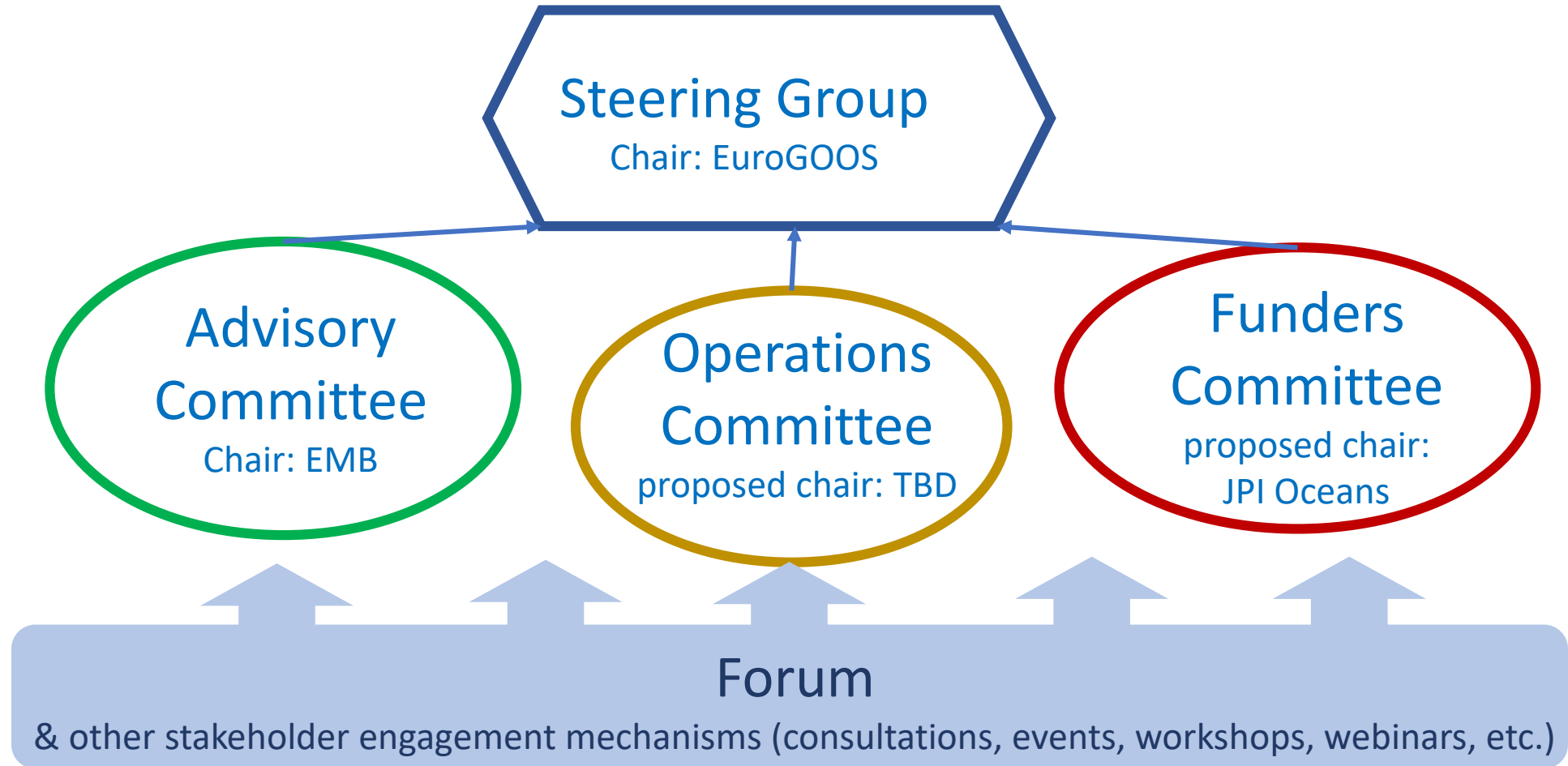
Proposed Governance

≥ 2019



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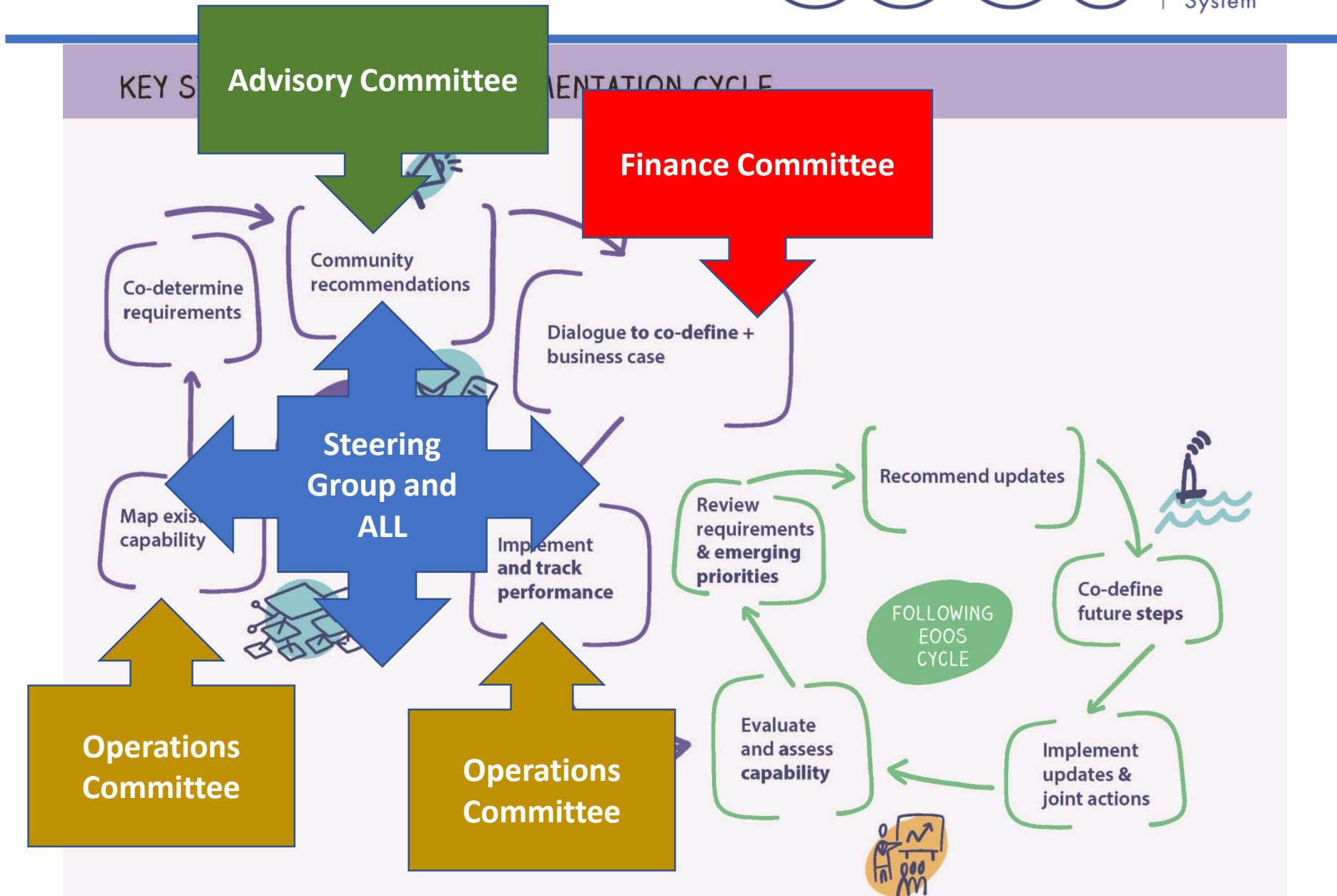
New Governance Structure in place as of 1 May 2019



EOOS Implementation cycle



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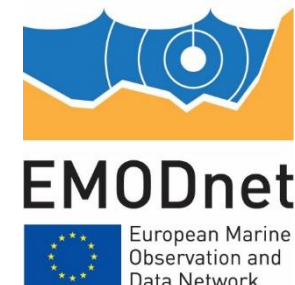


Help us shape the future EOOS!

Check www.eoos-ocean.eu for latest information



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EuroGOOS Member Benefits Survey

Introduction

Thank you for participating in this survey!

The time required to complete it is about 15 minutes.

The results will be invaluable to gather the Members' perceptions and suggestions for the EuroGOOS improvement.

We hope your feedback will help us strengthen the EuroGOOS Member benefits.

We greatly appreciate you taking time to complete this survey by **15 September 2018**.

- 30 EuroGOOS members completed the questionnaire, i.e. 71% of the EuroGOOS membership.
- Respondents were from 16 countries represented on EuroGOOS, i.e. 89% of countries represented on EuroGOOS.



EuroGOOS
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EuroGOOS Member Benefits Survey

August-September 2018

Report

At what level would you like to see the Office represent EuroGOOS strategic priorities?

1. **100% relevant:** Pan-European
2. **44% relevant:** Sea-Basin
3. **37% relevant:** Global
4. **15% relevant:** Local

What should be the most important activities of the EuroGOOS Office?

1. **96.3% relevant:** Promote the importance of ocean observing, data and services for policy, research, and industry
2. **81% relevant:** Prepare background and help implementing the strategy, agreed at the Assembly and Board meetings
3. **59% relevant:** Coordinate the implementation of EuroGOOS working groups and task teams
4. **30% relevant:** Assist in coordination of national and local initiatives in ocean observing, data and services AND equally ranked – Perform technical work in projects for the benefits of all the members (gap analysis, sustainability studies, etc).

EuroGOOS Member Benefits Survey August-September 2018

Recommendations (1)

1. EuroGOOS is perceived both as a broad-spectrum ocean observing network and an operational oceanography network. The exact scope and role of EuroGOOS is missing.

→ EuroGOOS members and the Board should urgently start the process of re-defining the exact scope and thematic and influence areas linked to ocean observing science, technology, operation, and services.

2. EuroGOOS has a good set of instruments to perform its activities, i.e. working groups, task teams, and ROOS. These are well integrated and lack strategic influence. The office and Board should address the EuroGOOS activities through management and follow-up frameworks allowing for a genuine integration.

→ A EuroGOOS activities brainstorming can be envisaged; followed up by a guidance document for the core activities.

3. Members receive a low level of information about EuroGOOS projects. Some projects are perceived duplicating efforts or competing with members.

→ EuroGOOS projects should be discussed and planned holistically together with the EuroGOOS core activities and EOOS, to allow activities fully benefit each other, and the members.

4. EuroGOOS should host the office for EOOS. However, the objectives of both EuroGOOS and EOOS should be further clarified.

→ Office continue providing the EOOS office. Engage with the members and Board on finetuning the shared understanding of the EuroGOOS and EOOS objectives (see also recommendation 1).

Strategy 2020-2025

- Worked with facilitator and small group to develop
- Call with ROOS/TT/WG later in April
- Discussion at GA
- Further drafting

EuroGOOS Member Benefits Survey August-September 2018

Recommendations (2)

5. EuroGOOS general assembly should discuss strategic items, from science to technology to EU programming, allowing members to jointly participate in strategic decision making.

→ Co-design the assembly agenda with the Board and members well in advance; and allow enough discussion time during the meeting.

6. There is interest among the members to join ongoing WGs, task teams and ROOS.

→ The office should discuss this with the activities' chairs and subsequently consider new nominations calls.

7. Members want to see more policy influence by the office.

→ Office should propose a policy-communication strategy which will allow a stronger lobbying role and impactful outreach, co-designed with the members, Board and activities.

8. Membership expansion should target countries not yet represented and organizations with major influence in ocean observing. It is noted, EuroGOOS tend to keep members for a long time.

→ Finetune the EuroGOOS membership expansion strategy to consider the EuroGOOS broadening of scope (see also recommendation 1).



Recently done or in the pipeline to promote members' activities:

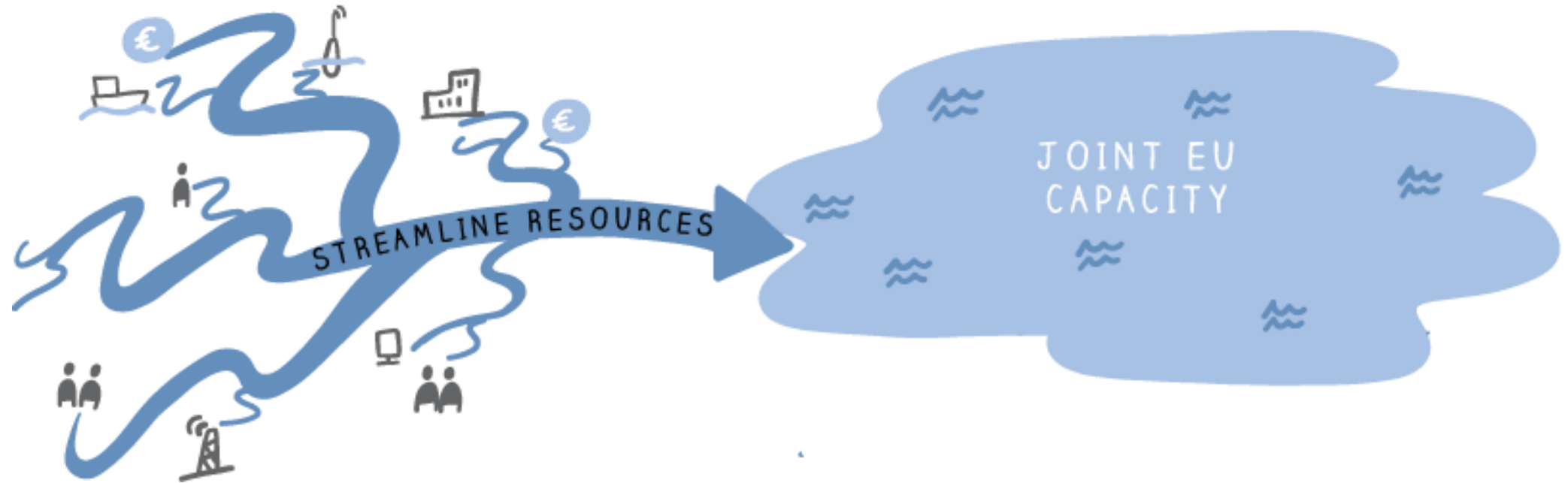
- Member **benefits survey** (designed with Board and Chairs)
- Revamped website
- Member **products catalogue**
- Survey of members' **communication channels** and responsible staff members
- Member **sharing platform** for national ocean literacy activities (in development)
- **Meet the Members campaign** (in development, along the lines of the very successful ICOS RI #ICOScapes photo exhibition; potential launch at OceanObs '19)
- European Maritime Day **workshop on maritime technologies** (in development to involve members, TTs and ROOS and WGs)

5 Important Elements of Good Website





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