



**EuroGOOS**  
European Global Ocean  
Observing System



*Foras na Mara*  
*Marine Institute*

**10<sup>th</sup>** EuroGOOS  
**International  
Conference**  
**3-5 Oct 23**  
**Galway, Ireland**

**European Operational Oceanography**  
for the Ocean we want – addressing  
the UN Ocean Decade Challenges

# Conference Statement



**2021** United Nations Decade  
**2030** of Ocean Science  
for Sustainable Development

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## 10<sup>th</sup> EuroGOOS International Conference Statement

In its nearly 30 years of existence, EuroGOOS has become the leading forum for European operational oceanography. The EuroGOOS community is strongly positioned to meet the challenges required by operational oceanography today and into the future, including the needs of the Green Deal and other European initiatives or directives, and to meet national policy needs. Thanks to well-developed networks facilitating regional and international cooperation, European institutions and agencies together have world-leading capacity across the ocean knowledge value chain. On 3-5 October 2023, the **10<sup>th</sup> EuroGOOS International Conference**, the primary gathering for operational oceanography in Europe, brought together more than 160 ocean experts to exchange ideas and recent developments, and to discuss priorities in the context of the **UN Decade of Ocean Science for Sustainable Development 2021-2030**.

The diversity of Europe and the European operational oceanography community is a great strength. However, it can also lead to fragmentation and associated challenges. Continuing to strengthen coordination at national levels, aligning with the European frameworks, such as the **European Ocean Observing System (EOOS)**, and global efforts, will be essential for the community to meet its ambitions and the needs of users in all sectors of society.

### Key priorities and messages from the 10<sup>th</sup> EuroGOOS International Conference

**Operational oceanography in Europe must develop with a holistic Earth system approach.** The operational oceanography value chain must be better connected to those of other environmental domains (terrestrial, hydrological, atmospheric, cryospheric, climate, etc.), as well as socio-economic information systems, to deliver fit-for-purpose products and services. This must be simultaneous with the continuous efforts to strengthen the ocean-specific capabilities that are the core of the European operational oceanography community.

**Without observations, ocean services and products are not possible.** Ocean observations play a crucial role in delivering essential marine services and products relied upon by users in Europe and worldwide, including forecasts, data products, and model outputs at the frequency that is needed by the users. Ocean observations must be sustainable (in all regards), cost-effective and with sufficient coverage. The continued development of the European Ocean Observing System (EOOS) is therefore a collective ambition of the highest priority.

**EuroGOOS activities are an important asset contributing to the UN Ocean Decade Challenges for collective impact.** Alignment with Decade activities and objectives will further reinforce the impact of EuroGOOS, helping to realise its vision at a global level. The continued engagement of EuroGOOS and its community in the Decade activities will be crucial to the Decade's success in Europe and beyond. The participation of EuroGOOS in Decade Collaborative Centers and in other relevant Decade Actions is the manifestation of this. EuroGOOS collaboration and alignment with GOOS is a cornerstone for enhancing the collective impact of our activities in this context.

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**Genuine co-design of operational oceanography with users and stakeholders, including policymakers, is essential to ensure their needs are met.** For operational oceanography to be fit for purpose and truly meet societal needs, stakeholder engagement, and co-design of the system with users from the outset must become the standard practice. Realising the benefits of operational oceanography for Europe and the world can only be done by embracing well-structured and adequately funded engagement and co-design activities, while also continuously reviewing and adapting to emerging needs.

**There is no operational oceanography without people - the skilled individuals without whom there would be no ocean observations, infrastructure and data management, or forecasts and services.** Observing platforms or data by themselves cannot deliver the ocean knowledge, products and services Europe needs. Providing adequate resources to the human capacities is key to enable high qualified observations. Enhanced training and education are needed, along with opportunities to ensure operational oceanography is an attractive career path, whether in a scientific, technical, managerial, or other domains.

**It is imperative to boost and demonstrate the value of ocean observing and operational oceanography to all stakeholders across the marine knowledge value chain.** Understanding of the value of ocean observing and operational oceanography, and their interdependency, must not be taken for granted. Communication, awareness raising, and the ongoing demonstration of economic value are needed to strengthen the case for observations. These are an essential part of Europe's efforts to meet the needs of users in the blue economy and deliver on climate and biodiversity targets.

Beyond these overarching priorities, several specific recommendations emerged as outcomes of the 10<sup>th</sup> EuroGOOS International Conference, in the areas of ocean observations, modelling, forecasting, Digital Twins of the Ocean and data, as well as engagement and ocean literacy.

## Ocean Observations

Observations are the foundation of ocean knowledge. To develop EOOS as the coordinated Europe-wide ocean observing system, national level coordination must be strong, observing plans must be guided by user needs and shared to facilitate cooperation. Particular needs for ocean observing in Europe are:

- Tackle fragmentation of observing capacities by strengthening coordination of ocean observing at a national level, aligned with the Europe-wide context of the EOOS Framework.
- Greater recognition of the human resources, the people, who operate the observing systems, and development of Europe-wide skills development and training actions for technicians.
- Improve the sustainability of European operational oceanography in all regards, including environmental impacts and funding. Efforts must be made to minimise the environmental impacts of ocean observing platforms and infrastructures. This includes improved retrieval of equipment, further development

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of autonomous, smart and low-impact platforms, and greater efficiency through new technologies, improved planning coordination and cooperation.

- Simplify processes to obtain permissions for transnational oceanographic activities to greatly improve efficiency in planning and operations, benefiting the community and facilitating better coordinated and seamless observing campaigns.
- Improve resources for the analysis of the obtained observations and operation and maintenance of the observing systems and deliver on climate and biodiversity targets.

## Modelling, forecasting, Digital Twins of the Ocean and data

Ocean modelling and forecasting must continue to advance for many applications, including to support the development of Digital Twins of the Ocean, and must continue to develop through a co-design with users and stakeholders.

- Advancements in ocean modelling capabilities require a special focus on developing improved coastal and biological applications.
- Ensemble prediction and forecasting capabilities, improved ocean-wave-ice coupling, and assimilation of biogeochemical data are particular targets for development.
- Europe's expertise and capacities in modelling must be shared and strengthened, including the development of new techniques and applications involving artificial intelligence.
- To advance services, including the Digital Twins of the Ocean, we must build upon existing European achievements and continue to promote FAIR data standards, and we must maintain data traceability and ensure proper credit is provided to its origin.

## Engagement and ocean literacy

To unlock the full potential of operational oceanography in Europe, it is essential to prioritise awareness-raising and active citizen engagement. Developing an ocean literate Europe across all sectors, disciplines, and communities will foster innovation and new applications of ocean knowledge and information, further raising the value of operational oceanography and ocean observing to society.

- Stakeholder engagement and Ocean Literacy should be targeted, properly planned, and well resourced (personnel and activities) and include regular impact assessment. Ocean Literacy should incorporate socio-economic, artistic and creative disciplines to truly promote behaviour change towards sustainability. Cross-disciplinary partnerships are needed.

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- Citizen science activities should be fostered in all areas of oceanography through partnerships.
- Further capacity sharing and best practices in engagement and ocean literacy should be promoted across Europe and beyond.

## The future of EuroGOOS in the Ocean Decade

EuroGOOS represents the collective voice of the European operational oceanography community and will continue to serve as the primary forum for its coordination and development, to meet the needs of all users of marine knowledge, information, products and services. The EuroGOOS Community looks forward to addressing the UN Ocean Decade Challenges and meeting its objectives. Results of these efforts will advance Europe as a leader in operational oceanography and ocean observing globally.



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