

UN Ocean Conference Written Contribution

The European Marine Board (EMB) would like to thank the Governments of Kenya and Portugal for co-hosting the 2022 UN Ocean Conference. As the leading European think-tank in marine science policy, we re-iterate the importance of marine scientific knowledge and research capacity for the achievement of all the Sustainable Development Goals (SDGs). Humans are inextricably linked to the Ocean: we rely on a healthy Ocean for a sustainable future. The interconnected nature of key societal challenges requires a holistic, systems approach to science, management, and policy. Ocean knowledge should take a central role in planning for a sustainable future including understanding and managing the water system; weather and climate systems; biodiversity; and the links between the Ocean and human societies, economy, health, and wellbeing.

There are insufficient observations on the coast and deep sea, at the land-sea and Ocean-atmosphere interface. Existing observations are unevenly distributed between the northern and southern hemispheres and between different marine habitats (i.e., pelagic, mesopelagic). Equal distribution of observations in the Ocean requires capacity development in developing States. The lack of sustained funding for observations is exacerbated by the lack of international observation coordination within and between States and in Areas Beyond National Jurisdiction (ABNJ). Observations should be planned at sea basin level, distributed among States based on ability, and recognized as enabling infrastructure generating global public-good data supporting sustainable development. They should not depend on research funding, as this is an international safety, food security, and climate change risk reduction issue. The EMB Policy Brief No. 9¹ provides recommendations for sustained *in situ* observations in the age of the digital Ocean, including to establish a process to review the costs and performance of the system and map its economic and environmental benefits, and to advance its implementation with appropriate financing models. These observation systems and science programs should be transdisciplinary and co-designed with local and traditional knowledge holders. EMB supports the open sharing and dissemination of data and knowledge resulting from observations and research. However, open science should be equitable and academic publishing business models should allow inclusion of developing States' scientists.

These issues have been highlighted in the EMB's flagship publication Navigating the Future V (NFV)², and Policy Brief No. 6³, which describes the marine science needed for a sustainable future beyond 2030. It also highlighted: critical knowledge gaps related to Ocean connectivity in space and time; interactions between- and impact of- multiple stressors, climate-related extreme events and geohazards; advancements in Ocean technology, modelling, and artificial intelligence needed to understand, predict, and manage the impact of human activities on the Ocean within a digital Ocean twin. It recommends the adoption of solutions-oriented, transdisciplinary marine research agendas co-designed with all stakeholders, and with the governance of sustainability at their core.

International cooperation is required to address key societal challenges, e.g. biodiversity loss, population growth, and over-consumption. Stronger connections are also required between natural-, social-, and political- sciences, and the humanities, as well as across all generations, and solutions should be co-designed with government, industry, and other stakeholders including traditional and local knowledge holders. However, it takes time to build the trust and

¹ <https://www.marineboard.eu/publications/sustaining-situ-ocean-observations-age-digital-ocean>

² <https://www.marineboard.eu/navigating-future-v>

³ <https://www.marineboard.eu/publications/navigating-future-v-recomendations-ocean-decade>

mutual understanding among transdisciplinary research teams. Training and sharing of best practices are key to enable transdisciplinary research, as highlighted in the European Union's International Ocean Governance (IOG) Forum⁴. We should also consider new ways to communicate to ensure everyone can engage with the SDGs.

An additional priority knowledge gap is Ocean and Human Health (OHH), which aims to understand the complex links between the health of the Ocean and that of humans in order to achieve beneficial outcomes for both. OHH research provides an avenue for transdisciplinary cooperation in the context of the SDGs. Recommendations for its advancement are described in EMB's Policy Brief No. 8⁵ and the SOPHIE project's Strategic Research Agenda for Ocean and Human Health⁶.

The EMB has also developed recommendations for advancing research on *inter alia* underwater noise⁷, marine geohazards⁸, big data⁹, valuing marine ecosystem services¹⁰, and marine ecosystem modelling¹¹, which are all relevant to achieving the SDGs.

Sheila JJ Heymans

Executive Director

⁴ <https://3rd-iog-forum.fresh-thoughts.eu/wp-content/uploads/sites/89/2021/04/IOG-recommendations-2021-WEB.pdf>

⁵ <https://www.marineboard.eu/publications/policy-needs-oceans-and-human-health>

⁶ <https://sophie2020.eu/strategic-research-agenda/>

⁷ <https://www.marineboard.eu/publications/addressing-underwater-noise-europe-current-state-knowledge-and-future-priorities>

⁸ <https://www.marineboard.eu/publications/marine-geohazards-safeguarding-society-and-blue-economy-hidden-threat>

⁹ <https://www.marineboard.eu/publications/big-data-marine-science>

¹⁰ <https://www.marineboard.eu/publications/valuing-marine-ecosystem-services-%E2%80%93-taking-account-value-ecosystem-benefits-blue>

¹¹ <https://www.marineboard.eu/publications/enhancing-europes-capability-marine-ecosystem-modelling-societal-benefit>