

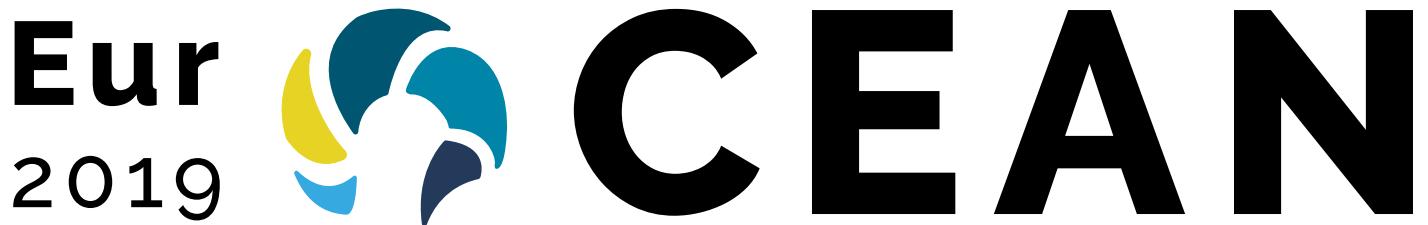
EuroOCEAN

2019

Europe's marine science
contribution to a
sustainable future

Conference report





Europe's marine science contribution to a sustainable future

Conference report

11-12 June 2019, UNESCO, Paris, France

Edited by Ángel Muñiz Piniella, Britt Alexander, Joke Coopman, Paula Kellett & Sheila JJ Heymans.

Conference co-organised by the European Marine Board, the Directorate-General for Research and Innovation from the European Commission and the Intergovernmental Oceanographic Commission of UNESCO.

The EurOCEAN 2019 organizing committee (Annex 1) appreciates the additional support from the Marine Institute, L'Institut Français de Recherche pour l'Exploitation de la Mer (Ifremer), the National Oceanography Centre (NOC), Centre National de la Recherche Scientifique (CNRS), Université de Bretagne Occidentale (UBO) and the Norwegian Marine University Consortium.

The EurOCEAN 2019 conference is recognised as a contribution to the preparatory phase of the UN Decade of Ocean Science for Sustainable Development (2021-2030).

This publication should be quoted as follows:

Muñiz Piniella, Á., Alexander, B., Coopman, J., Kellett, P., Heymans, J.J. (Eds.). 2019. EurOCEAN 2019 conference report. EurOCEAN 2019 - Europe's marine science contribution to a sustainable future. UNESCO, Paris, France, 11-12 June 2019. ISBN: 978-94-92043-76-4 doi: 10.5281/zenodo.3384627

All pictures are credited to *Damian Cook, European Marine Board*



SUMMARY OF THE EUROCEAN 2019 CONFERENCE

The EurOCEAN 2019 conference is an official contribution to the preparatory phase of the UN Decade of Ocean Science for Sustainable Development (2021-2030). It is an important initial step from the European marine science community to prepare for the UN Ocean Decade and to ensure that it aligns with the EU Framework Programmes.

Possible solutions exist to the challenges the ocean faces. However, these need to be aligned, implemented and enforced via holistic approaches, ensuring willingness, trust and co-creation by all stakeholders. The marine science community has the vital responsibility to ensure that ocean science is involved in the discussion to deliver appropriate answers to societal questions, to raise awareness of the intrinsic links we have with the ocean, and to inform and give courage to relevant decision-makers at all levels at the appropriate time.

Europe is at the forefront in enabling science to provide support in making wise decisions and has the potential to become the largest ocean research community in the world. European marine science is prepared to contribute to handling the critical challenges we now confront.

Ocean issues now have the attention of society. The European marine science community, national governments and the European Union are engaged and need to deliver the objectives of the UN Decade of Ocean Science for Sustainable Development (2021-2030).

Everybody is responsible for making it a success. We can't manage the ocean; we can only manage human activities.



FOREWORD

We, Jan Mees (Chair of the European Marine Board till June 2019) and Gilles Lericolais (current Chair of the European Marine Board), are delighted to introduce the EurOCEAN 2019 conference report. This publication documents the contributions and discussions that took place over two consecutive days at the UNESCO headquarters in Paris, France in June 2019. EurOCEAN conferences provide a unique window of opportunity for scientists, policy makers and other stakeholders to come together and discuss the next challenges and opportunities in seas and oceans research.

We hope that the EurOCEAN 2019 conference, as a collaborative venture with the Directorate-General for Research and Innovation from the European Commission and the Intergovernmental Oceanographic Commission (IOC), has succeeded in showing the potential European marine science contribution to the United Nations Decade of Ocean Science for Sustainable Development (2021-2030). The launch of the fifth edition of Navigating the Future at the conference set a milestone for the European Marine Board in its role as an independent non-governmental advisory body. Navigating the Future V provides governments with robust, independent marine science advice on knowledge gaps, and guidance for future investments in seas and ocean research and observations to 2030 and beyond. Together with the EurOCEAN conference report, it provides new insights to guide the next work programmes of Horizon Europe and emphasizes the importance of research to support a sustainable interaction with our seas and oceans.

Gilles Lericolais, Director of European and International Affairs at Ifremer, would like to pay tribute to Jan Mees, Director of the Flanders Marine Institute, for his outstanding leadership and guidance in the organisation of this successful conference. Jan Mees would like to wish Gilles Lericolais the best of luck for building on the outcomes of this conference and driving the European Marine Board into the onset of the Ocean Decade.

We both would like to thank the members of the EMB Secretariat, Executive Director Sheila Heymans, Joke Coopman, Paula Kellett, Britt Alexander, and - especially - Ángel Muñiz Piniella, for their hard work in organising this conference. We thank the Intergovernmental Oceanographic Commission (IOC) of UNESCO for their work in the lead up to the conference and for a warm welcome in Paris. We thank also our colleagues in the Healthy Oceans & Seas Unit of the European Commission, Directorate-General Research and Innovation, for their input into the conference. With the European Marine Board, these partners have worked together to make EurOCEAN 2019 one of the most successful EurOCEAN conferences to date.



Gilles Lericolais
Chair, European Marine Board
June 2019 to date



Jan Mees
Former Chair, European Marine Board
May 2014 – June 2019

MESSAGE FROM THE EUROPEAN MARINE BOARD

This is a message from the Europe Marine Board to the wider society represented by the participants of EurOCEAN 2019. It describes how we should work together during the next decade (2021-2030), in light of the forthcoming IPCC report on the Ocean and Cryosphere, to achieve the future we want for the ocean and the role we envisage for the European marine science community in contributing to achieving the United Nations Sustainable Development Goals.

Ocean awareness is increasing: from the concern of plastic litter in the ocean¹, to the multiple impacts of climate change, including on human health, and the willingness of citizens to take action. This provides an opportunity to gain a better understanding of the ocean and its close relationship with the land, atmosphere and humans; to describe possible solutions to global challenges; and to promote the human behavioural changes needed for a sustainable ocean.

Recent ocean-focussed conferences all have a common message: to better understand the ocean through marine science and ensure that marine research is relevant to wider society and can inform decision-making at all levels. The current and upcoming European Union Framework Programmes for Research and Innovation will provide opportunities to set and implement the European Union's objectives to achieve sustainable use of the marine environment. The UN Decade of Ocean Science for Sustainable Development (2021-2030)², the Ocean Decade, will generate the scientific knowledge and build the underpinning infrastructures and partnerships needed for sustainable development of the ocean. The Ocean Decade will provide ocean science, data and information to inform policies for a well-functioning ocean in support of all Sustainable Development Goals of the 2030 UN Agenda and the Paris Agreement³.

EurOCEAN 2019 is one of the first steps from the European scientific community to prepare for the Ocean Decade and ensuring that it aligns with the EU Framework Programmes. Whilst strategic frameworks, such as the Ocean Decade, are in place, it is now imperative that we take decisive and urgent action to address the growing and combined impacts of climate change and human pressures on our marine environment.

Europe's marine science contribution to a sustainable future

The European Marine Board reiterates the commitments of its 6th EMB Forum Message "Marine science to support the UN2030 Sustainable Development Goals"⁴. However, to achieve sustainable development we need to realise the goals of the EurOCEAN 2014 Rome Declaration⁵ and address the Call to Action on "Evolving European Ocean Observing"⁶. We therefore call on the United Nations, European countries, the European Union⁷, the European Investment Bank, and the private sector to support the marine scientific community in working towards the Ocean Decade goals.

¹ <http://oceanoliteracy.wp2.coexploration.org/>

² <https://en.unesco.org/ocean-decade>

³ <https://unfccc.int/process-and-meetings/the-paris-agreement/d2hhdc1pcy>

⁴ http://www.marineboard.eu/sites/marineboard.eu/files/public/EMB%206th%20Forum/EMB_6th_Forum_Message.pdf

⁵ http://marineboard.eu/sites/marineboard.eu/files/public/publication/Rome%20Declaration-249_0.pdf

⁶ <https://eoosconference2018.eu/sites/default/files/E00%20Conference%20Call%20to%20Action%20FINAL.pdf>

⁷ Including the European Commission, Parliament and Council, in view of the initiatives supported by Horizon 2020 and the forthcoming Horizon Europe programme

As suggested in Navigating the Future V⁸, to achieve these goals we need to:

- Ensure that Horizon Europe, its proposed Mission “Healthy oceans, seas, coastal and inland waters”, and the Ocean Decade promote a holistic vision of the ocean, through a sea-basin approach, and by applying transdisciplinary sustainability science that includes scientists, users of the marine environment and civil society. It is particularly important to ensure that the Horizon Europe Mission “Healthy oceans, seas, coastal and inland waters” includes all sources of pollution harming the marine environment, increases our knowledge of the land-ocean-atmosphere interfaces, and is in line with the Ocean Decade goals.
- Promote marine research and innovation as pivotal for cooperation between countries at sea basin (including across-basins), European and international levels, and towards international ocean governance, that ensures conservation and sustainable use of sea and ocean resources.
- Support fundamental research as the foundation of science. Knowledge of the essential processes of the ocean governed by geology, physics, chemistry and biology and fundamental research techniques, such as taxonomy, set the basis for applied science to generate societal impacts.
- Build a better-coordinated European Ocean Observing System, which includes sustained in-situ ocean observations, aligns with the GOOS 2030 Strategy⁹, and ensures an Integrated Ecosystem Approach. This will help to establish an early-response system to gain a better understanding of the short- and long-term impacts of extreme events and multiple stressors on the marine environment and the ecosystem services it provides.
- Ensure a knowledge-based circular blue economy¹⁰, including organizing the different uses of the ocean space across time, to balance conservation efforts, food and energy production, and harness ocean resources in a sustainable and equitable manner, while minimizing the human impact on the environment.
- Go beyond the marine science community to re-inforce that the ocean is a common good whose health is crucial for humanity. Current science and new technologies have a role in stimulating a fascination for discovery in our seas and oceans, together with the identification of common priorities through collaboration with all stakeholders. An ocean aware society will, in return, see the added value of investing in marine science and expanding the understanding of planet ocean.

⁸ <http://www.marineboard.eu/navigating-future-v>

⁹ GOOS 2019. The Global Ocean Observing System 2030 Strategy. IOC, Paris, 2019, IOC Brochure 2019-5 (IOC/BRO/2019/5) https://www.goosocean.org/components/com_oe/oe.php?task=download&id=42315&version=1.0&lang=1&format=1

¹⁰ https://ec.europa.eu/research/bioeconomy/pdf/ec_bioeconomy_strategy_2018.pdf#view=fit&pagemode=none

INTRODUCTION

EurOCEAN conferences are major European marine science policy conferences providing a forum for policymakers and strategic planners at European and national level, to interact with the marine research community and marine and maritime stakeholders. The distinctive feature that characterizes EurOCEAN is the focus on bringing stakeholders together to discuss policy issues in marine science. EurOCEAN conferences started in the 90s as EurOCEAN/MAST Days Conferences. Previous conferences were held in Brussels (1993), Sorrento (1995), Lisbon (1998), Hamburg (2000), Galway (2004), Aberdeen (2007), Ostend (2010), Rome (2014), and most recently, Paris (2019). Since 2000, EurOCEAN conferences are organized by the European Marine Board and the European Commission in partnership with a local host.

EurOCEAN 2019 took place on 11-12 June 2019 and was hosted by the Intergovernmental Oceanographic Commission of UNESCO at the UNESCO headquarters in Paris, France. The conference discussed the contribution of European marine science to the United Nations Decade of Ocean Science for Sustainable Development (2021-2030), the Ocean Decade, and is recognised as a contribution to its preparatory phase. The conference highlighted the contribution of marine science to ongoing and future initiatives supported by the European Union Framework Programmes for Research and Innovation, including Horizon 2020 (2014-2020) and the forthcoming Horizon Europe (2021-2027). The European Marine Board flagship publication **Navigating the Future V** (NFV) was launched at EurOCEAN 2019. Navigating the Future V describes what marine science will look like in the next decade and beyond, and what the needs are to achieve this. NFV provides robust, independent scientific advice and expert opinion with increasing importance to societal wellbeing in decades to come.

Involving the youth in EurOCEAN 2019

The EurOCEAN 2019 Organizing Committee was keen to involve early career scientists in the conference, as they will be responsible for dealing with the consequences of our actions by the end of the Ocean Decade in 2030.

The two EMB Young Ambassadors, Alba González Vega and Liam Lachs, were invited to present their vision for the future of marine science at the closing session of the conference. They invited the other young marine scientists present at the conference, including the selected poster presenters (Annex 2), to contribute to this vision, and guided them throughout the conference. All early career scientists present at the conference actively contributed to the discussions and in the networking sessions, and they were a valuable part of the organising team.

The involvement of the youth in the conference was appreciated by the participants. It reminded them of the valuable and exciting information we obtain from ocean science, and of the important science being done by early career scientists. EurOCEAN 2019 offered young scientists the opportunity to make their voice heard and create new connections and insights for their research.



The EurOCEAN 2019 conference was co-organised by the European Marine Board (EMB), the Directorate-General for Research and Innovation from the European Commission and the Intergovernmental Oceanographic Commission of UNESCO, with special input received from the Romanian Black Sea Research Consortium and the Romanian Ministry of Research and Innovation, and additional support from the Marine Institute, L'Institut Français de Recherche pour l'Exploitation de la Mer (Ifremer), the National Oceanography Centre (NOC), Centre National de la Recherche Scientifique (CNRS), Université de Bretagne Occidentale (UBO) and the Norwegian Marine University Consortium.

Since EurOCEAN 2004 in Galway, EurOCEAN conferences have delivered a Declaration, an agreed position representing the combined voice of the marine science and technology community, which plays a central role in advancing marine science and science policy agendas in Europe. EurOCEAN 2019 broke this tradition, as Navigating the Future V, developed by a wide range of experts and peer-reviewed, is a more comprehensive declaration of what marine science should look like in the next decade and how can it contribute to achieve the Sustainable Development Goals. Instead, the European Marine Board published a **Message to EurOCEAN 2019**. The Message to EurOCEAN2019 is based on the recommendations from Navigating the Future V on what would be Europe's marine science contribution to a sustainable future. The message was agreed by EMB members (major national marine or oceanographic institutes, research funding agencies, and national consortia of universities with a strong marine research focus; representing around 10,000 scientists and technical staff).

EurOCEAN 2019 in numbers:

185 participants
130 organizations
28 countries
49% female participants
40% female moderators, speakers, panellists
533 tweets (using #EurOCEAN2019)

This conference report provides a summary of the main highlights and key messages delivered by the speakers and panellists at the EurOCEAN 2019 conference. The presentations, Declarations and reports of all EurOCEAN conferences are available on the website: <http://www.euroceanconferences.eu>.

Introducing the empty chair dynamic

An empty chair on stage was available at some discussion panels to allow participants to contribute and discuss with the experts on stage. This approach was welcomed by the EurOCEAN 2019 participants as a way to break the barrier between the panellists on stage and the public, and many participants came up to ask their questions and to make comments.



Tuesday, 11 June 2019

Welcome and opening addresses



Jan Mees (Chair of European Marine Board and Director of the Flanders Marine Institute – VLIZ) formally opened the EurOCEAN 2019 conference and welcomed the participants. In his speech, he referred to previous EurOCEAN conferences, including the last one in 2014 in Rome, under the Italian Presidency of the Council of the European Union. These conferences, he mentioned, delivered declarations that helped to achieve advancements in ocean literacy, ocean observation coordination and oceans and human health research, among others. In EurOCEAN 2019 a message from European Marine Board to the conference was made available to the participants. This is a call for action and a statement of intent on the marine science contribution to a sustainable future. He then invited opening remarks from the co-organisers of the conference and key notes from the speakers at the opening session.

John Bell (Director for a Healthy Planet at the Directorate-General for Research and Innovation, European Commission) gave an inspirational vision of marine science moving centre-stage and the scientific community delivering answers to societal questions, stepping out of the niche into the norm. He said that science's response to the next decade's challenges will shape and define the boundaries of our society, and that our oceans will determine the outcome, the choices and decisions to be taken. He emphasized the need to keep improving our understanding of the ocean and he welcomed the launch of Navigating the Future V and considered it timely. He pondered the delivery of previous Navigating the Future editions, and if all the recommendations have been attained. He concluded that the European Commission is fully committed to deliver a sustainable ocean that will impact our society and the sustainability agenda, with among others, the new missions of Horizon Europe, including the Mission on Healthy Oceans, Seas, Coastal and Inland Waters.



"Science must give courage to politics and our oceans should be at the centre of giving answers to achieve a sustainable future!"



Salvatore Aricò (Head of Ocean Science Section at the Intergovernmental Oceanographic Commission (IOC) of UNESCO), on behalf of Vladimir Ryabinin, Executive Secretary of IOC-UNESCO, welcomed the participants to the United Nations Educational, Scientific and Cultural Organization (UNESCO) headquarters in Paris. He presented the United Nations Decade of Ocean Science for Sustainable Development (2021–2030), and hoped that this decade will bring the importance of science for society to the table. To achieve this, he emphasised the need to co-develop research agendas with views from multiple stakeholders beyond scientists and that Europe can lead this co-design for the Ocean Decade. He highlighted that EurOCEAN conferences can bring together marine science actors to discuss the future and to ensure that the Ocean Decade delivers. He also welcomed Navigating the Future V as a useful vision and highlighted the high level of convergence between the themes addressed and the priority areas they have been identified for the Ocean Decade.

"For the Ocean Decade to be a meaningful decade it has to be filled with meaningful science."

As keynote speaker, **Kirsten Isensee** (Programme Specialist at the Ocean Science Section at IOC-UNESCO) gave an overview of gender in ocean science, in light of the theme of World Oceans Day 2019, which took place on 8 June 2019. She presented the results from the research conducted within the framework of the UNESCO Science Report in 2015 and the Global Ocean Science Report in 2017, highlighting that female scientists comprise on average 38% of the researchers in ocean science, which is 10% higher than science in general. However, this percentage varies depending on country, wealth, area of research and career level, being significantly reduced at senior levels. She called for an increase in the number of women in ocean science, including in leadership positions and in the international environment, and found the Ocean Decade an excellent opportunity to address human capacity needs to achieve the Sustainable Development Goals.



"We need new ways of female empowerment tailored to ocean science to achieve the Sustainable Development Goals."



H.E. Adrian Cioroianu (Ambassador to the Permanent Delegation of Romania to UNESCO), on behalf of George Ciamba, Minister Delegate for European Affairs at the Ministry of Foreign Affairs of Romania, summarized the biggest achievements related to ocean science from the Romanian Presidency of the Council of the European Union in early 2019. He listed the achievement of a common understanding on Horizon Europe, the next EU research and innovation framework programme between the European Council and the European Parliament. The second biggest achievement was to establish a marine research cooperation framework for the Black Sea region, including the launch of the Common Maritime Agenda for the Black Sea and the Black Sea Strategic Research and Innovation Agenda. He highlighted that Horizon Europe will include a Mission on Healthy Oceans, Seas, Coastal and Inland Waters, and emphasised the importance of rivers in achieving a healthy ocean. Ambassador Cioroianu concluded that with the Danube river flowing into the Black Sea and therefore connected to the global ocean, Romania stands ready to take leadership and collaborate with other countries to support science for good management of river and seas systems.

"Black Sea research activities should be carried out in collaboration with other countries, no matter where they are."

Laurent Bergeot (Head of the Research Department at the Ministry for the Ecological and Inclusive Transition of France) referred to the Paris Agreement, where the ocean was considered, although not in the initial negotiations. Since then, the ocean has entered the international policy sphere. He stressed the importance of the ocean for France and human kind in general, and how observations are essential to shed light on the role of the ocean in regulating climate and supporting biodiversity and ecosystem services. He noted international efforts like the Global Ocean Science Report and a global biodiversity framework for the high seas as important and highlighted the need for scientific knowledge to support public policy.



"Science and technology capacity is improving in Europe, and has the potential to become the largest ocean research community worldwide."



Bernhard Friess (Director for Maritime Policy and Blue Economy at the Directorate-General for Maritime Affairs and Fisheries, European Commission), on behalf of Karmenu Vella, European Commissioner for Environment, Maritime Affairs and Fisheries, challenged the audience on whether they believed that the targets of the Paris Agreement will be met in time? After the overall negative response, he stated that he feared that the audience is right. He highlighted that a recent IPCC report said we will need to reduce our carbon emissions by half if we want to achieve the targets of the Paris Agreement and he stated that he was looking forward to the upcoming IPCC report on the ocean and cryosphere. He then listed the efforts of the European Union to go towards a decarbonized society and a science based approach. He quoted Director John Bell that science should give courage to politics and concluded that the science is there with the solutions, but there is a need to start thinking in terms of risks and risk management.

"We should establish a culture of risk assessments, making politicians aware of the risks that we have in front of us."

François Houllier (President Director General of the Institut Français de Recherche pour l'Exploitation de la Mer) highlighted what Ifremer, one of largest marine institutes in world, and the French marine science community does to cooperate globally. He stressed the importance of moving to inter- and transdisciplinary science, ocean observation collaboration, access and sharing infrastructures and knowledge, and citizen science. He noted the close alignment of messages from Navigating the Future V with Ifremer and French national priorities. He emphasized the need to improve marine biodiversity observations and deep-sea observatories to learn more about the marine ecosystem, foster international cooperation and a better coupling with climate modelling. He finished by calling for marine science to be fully open, from data to knowledge, to support policy making and the public at large.



"We will be held accountable in 2030."

Closing the session, **Jan Mees** thanked the speakers for their contributions and for approaching the difficult balance between ocean optimism and the sense of urgency. He then officially launched the 5th edition of Navigating the Future and thanked all those who made it possible. He analyzed the significant progress and changes in marine and maritime policy and in the marine science policy landscape since the launch of Navigating the Future IV in 2013. He explained that it was time to move from analysis into synthesis, from the encyclopaedic approach of the 4th edition, to the big themes in the 5th. This approach, he said, will help provide knowledge that is ready to use for policy makers. He emphasized that there are still a lot of knowledge gaps in several areas, and he hoped that Navigating the Future V will feed into current planning for the Ocean Decade and Horizon Europe.



Navigating the Future V in the marine science landscape

The session moderator, **Sheila JJ Heymans** (Navigating the Future V Chief Editor and Executive Director of European Marine Board) opened the session by presenting the main themes and recommendations from Navigating the Future V (NFV). The NFV themes, she clarified, were selected after an intense two-day workshop in Brussels in November 2017, and the overall document is a common effort between a group of expert authors from 13 European countries. She highlighted the overarching recommendation to work towards a solutions-oriented marine research agenda, co-designed with all stakeholders, and with the governance of sustainability at its core. She then introduced the speakers as representatives of the target audiences of NFV, to give their perspectives of the document.



"Navigating the Future V is our vision on how marine science can contribute to develop a sustainable future."



Representing the Executive Planning Group of the United Nations Decade of Ocean Science for Sustainable Development (2021-2030), **Anna Jöborn** (Director of Scientific Affairs Department at the Swedish Agency for Marine and Water Management) outlined the importance of NFV in communicating to policy the need of a new value chain and the importance of co-creation. She welcomed that NFV addresses sustainability science and the importance and need to collaborate with social science and the full spectrum of scientific disciplines. She mentioned the First Global Planning Meeting in preparation for the Ocean Decade in early 2019, and that Europe's marine science community are at the forefront in enabling science to provide knowledge support in making wise decisions. As it won't be an ordinary decade, she encouraged scientists to apply "source to sea" thinking, in order to demonstrate that science can answer the societal questions we face.

"The Navigating the Future V report shows European scientists are prepared to contribute to handle the really serious challenges we now confront."

From the European Commission, **Sigi Gruber** (Head of Healthy Oceans & Seas Unit at the Directorate-General for Research and Innovation, European Commission) made a call for action, balancing the urgency and ocean optimism referred to earlier, to reinforce the three pillars for ocean research: a clean planet, a fair and inclusive society and the blue economy, and the need for a holistic approach that includes oceans, seas, coasts, inland waters and activities on land. She welcomed NFV as source of inspiration, as previous editions did. She highlighted that Horizon Europe will be a powerful instrument to fund science in a moment where European society is requesting research and innovation solutions to the challenges the seas and ocean face. She explained that the intervention area from Horizon Europe on seas and ocean makes a plea for a holistic approach, to include inland activities as well, and it will look into the combination of conservation and restoration to achieve sustainable blue growth. She called for a new governance model and welcomed the new Missions from Horizon Europe, including the Mission on Healthy Oceans, Seas, Coastal and Inland Waters, and their co-creation approach via a multi-stakeholder Mission Board and the co-creation with citizens. She concluded by emphasizing the need to have a European marine research area, for which the partnership approach in Horizon Europe are revitalized by aligning research priorities of EU, national and local research funding.



"We have a twin goal: sustain growth and grow sustainably, but this will require a truly holistic view and approach, as Navigating the Future V promotes."



As Vice-Chair of the Joint Programming Initiative Healthy and Productive Seas and Oceans – JPI Oceans, **Joachim Harms** (Head of the Marine Research, Geosciences, Ship and Marine Technologies Department at Project Management Jülich in Germany) noted that NFV shows that there are still major knowledge gaps on how the ocean functions and the role it plays in our Earth system, and we truly cannot manage what we do not know. He congratulated EMB for delivering the document to the funders of marine research around the table of JPI Oceans, while they are updating their Strategic Research and Innovation Agenda (SRIA) to be delivered at the end of 2020. He listed the current and upcoming activities from JPI Oceans as a contribution from member states to achieve the goals of the Ocean Decade, and he highlighted that JPI Oceans is prepared to take responsibility to align with partners at international level to keep the ocean on the political agenda.

"We hope we can lead seas and oceans to a sustainable future."

Giving voice to the youth and the next generation of scientists, **Guillermo Ortúño Crespo** (Ph.D. student at Duke's Marine Geospatial Ecology Lab, and Fellow from Nippon Foundation Nereus Program) welcomed the opportunity to engage in an inter-generational discussion on the future of marine science. He stated that NFV is precisely the type of leadership that is necessary to help address the challenges and bridge science and management when decisions are taken. He described the themes of NFV as fitting closely with the six societal outcomes from the Ocean Decade and he made a call to governments, industry and society to help address these gaps. He called for an inclusive and interdisciplinary approach, not only in Europe, but also including transboundary impacts on the marine environment. He requested that conducting actions abroad should have the same standards as actions at our own coasts. He finished by hoping for cross-disciplinary opportunities for early career scientists to contribute to the shared vision for achieving the Ocean Decade goals.



"In 2015 we made 17 promises, the SDGs, to the next generation."



Closing the session, **Edward Hill** (Executive Director of National Oceanography Centre – NOC in the United Kingdom) informed the audience that he was involved in drafting previous Navigating the Future editions and reminded the audience that all science is framed by its social setting. In the fifth edition of Navigating the Future, he said, there are some new messages, but there are also older messages that have now become even more pressing, such as the need for understanding the ocean-climate interaction. He reviewed the messages from previous Navigating the Future editions, the interlinkages with previous EurOCEAN conferences and what has been achieved by emphasizing the need to work together, such as marine science supporting the Integrated Maritime Policy as highlighted in the Rome Declaration and NFIV. He underlined that NFV is inherently rooted in sustainable development, ocean governance, solutions and international cooperation in the scientific endeavour. He finalised by adding that NFV will place Europe's scientific community in a strong position by inspiring the possibilities of engaging with the sustainable development agenda, now that the ocean is receiving public and international attention.

"Navigating the Future V is a landmark document worthy of attention by the whole science community in Europe and beyond."



Session 1: Sustainable marine resources

A key message from this session is that balancing marine conservation and harvesting of ocean resources is possible, since solutions exist and sustainability is a science of complexity and is something that we can embrace; it only needs to be implemented and enforced via holistic approaches, including social research, industry and consumers. It was highlighted as important that we should avoid the same mistakes we made with other ocean resources and on land, and only harvest what we need.

The session moderator, **Mark Dickey-Collas** (Chair of Advisory Committee of the International Council for the Exploration of the Sea – ICES) introduced the session noting that achieving the targets set in international commitments and policies, such as the Aichi Biodiversity Targets and that of the Common Fisheries Policy, will require investment in data collection, the best available science and making it flow through to policy advice. He then introduced the speakers of the session.



"Minor improvements could make a huge difference!"

A shared presentation on science to sustainably harvest ocean resources, was given by the coordinator of the Horizon 2020 project SUMMER **Xabier Irigoien** (Scientific Director at AZTI in Spain) and the coordinator of the Horizon 2020 project MEESO, **Webjørn Melle** (Principal Scientist at the Institute of Marine Research in Norway). Xabier Irigoien explained that the SUMMER project will look at the sustainable management of resources in the mesopelagic, located in a region in the sea around 200-1000m deep where there is low light but not enough for photosynthesis. He

highlighted that there are estimations of a large biomass of fish in this region and that questions about the exploitation of these resources have been asked for years. He concluded that it is the last large wild resource we can potentially exploit, but exploiting it will be expensive, and this is the last opportunity to do it sustainably. Webjørn Melle also highlighted mesopelagic fisheries as the largest unexploited marine resource, and listed the research priorities to increase our understanding of this ecosystem, its interlinkages with other ecosystems, and its contribution to the carbon pump. He raised the issue that there would probably be a lot of bycatch and that as most mesopelagics areas occur in the high seas, mesopelagic fishing would probably happen at a multi-national level that will need to be managed internationally.

Ann-Katrien Lescrauwae (Director of International Relations at the Flanders Marine Institute in Belgium) gave her perspective on the science needed to conserve ocean resources and used the example of the return of the Atlantic blue fin tuna to the North Sea to explain how difficult it is to assess ecosystem-based conservation approaches in an environment already affected by climate change. She highlighted the need for cooperation between countries in order to sustainably use ocean resources, especially as many migratory and non-migratory species cross political boundaries of countries with different capacities for science, conservation, management, monitoring, legislation enforcement and observations. She pleaded for ocean science and technology that enables our understanding of the dynamic ocean and human drivers on a changing ocean. She emphasized the need to apply the FAIR principles to ocean data, find new governance mechanisms to cope with the challenges, and to understand the difference between equal access and equitable access. She concluded that the Ocean Decade offers a great opportunity to co-design a mission oriented research agenda for the ocean.



"We should regard ocean data as a public good."



Opening the panel discussion, Mark Dickey-Collas asked the panellists how they would balance marine conservation and harvesting of ocean resources.

Carina Kesktalo (Professor on Political Science at Umeå University in Sweden) provided her views as a member of the EU Scientific Advice Mechanism (SAM) High-Level Group of Scientific Advisors and author of the 'Food from the Ocean' Scientific Opinion. She highlighted that the document was written by members with a natural and social sciences background, and based on a background report provided by the Science Advice for Policy by European Academies (SAPEA). She enumerated some recommendations regarding food from the ocean relevant to the question, such as promoting aquaculture and linking agricultural and marine systems, and mainstreaming food from the ocean on policy agendas.

"We can start developing participatory processes to promote behaviour change."

Kristian Henriksen (Senior Manager at NCE Aquatech Cluster) provided an industry perspective. He stated that the aquaculture industry is actually the only aspect of food from the ocean that is growing, and that wild harvesting is decreasing worldwide. He explained that countries like Norway, have reduced the number of aquaculture sites and increased outputs thanks to better management and the use of more suitable areas for aquaculture. He highlighted that use of technologies such as ocean gliders should be enhanced to increase the speed of data availability to make urgent informed decisions.



"All industries have an impact on the ocean."



As co-lead of the Marine Biodiversity Observation Network, **Isabel Sousa Pinto** (Principal investigator at the Interdisciplinary Centre of Marine and Environmental Research – CIIMAR in Portugal) underlined that the main problem is that we currently harvest more than what we need, leaving nothing behind for the organisms living in the ocean. She stressed the importance of multi-trophic aquaculture and to designate a well-considered location for Marine Protected Areas based on research, specifically on ecosystem functioning, and effectively manage those areas, through for instance no-take zones.

"There is a point when we cannot harvest anymore."

Patrizio Mariani (Senior Researcher at the National Institute of Aquatic Resources - DTU AQUA in Denmark) added that sustainability is a process built on three pillars: society, economy and environment; and that all components need to be represented when finding solutions. He underlined that co-design is something that can be done from tomorrow already. Sometimes, knowledge is not available to underline the problem, but science has lots of tools that just need to be operationalized.



"Sustainability is a science of complexity."

The discussion following these initial perspectives focused on the feasibility of multi-trophic aquaculture and the need to avoid the problems that land agriculture has; how to change consumer preferences and perceptions of aquaculture products; the need for investing in behavioural change; how to engage with industry when the governance at sea is different than on land and; how to offer local solutions to global problems.

Thanking the speakers, panellists and the participants in the discussion, **Mark Dickey-Collas** reminded the participants that if scientists and other stakeholders would like their knowledge and evidence to be used, ensuring open access to data and publications is the only way.



Session 2: The land perspective for a healthy ocean

A key message from this session is that in order to find solutions to complex challenges, such as plastics and pesticides polluting our changing coasts, seas and oceans, we must adopt a land to sea perspective and science must be involved in the discussion together with all societal actors including industry.



Session moderator **Julia Schnetzer** (Scientific Coordinator of the Ocean Plastics Lab), introduced the session, which focused on bringing land and sea research areas closer together. She highlighted that most of the problems the ocean face originates from land, and although there are many different pollutants, this session will focus on plastic and pesticides. She then introduced the interdisciplinary panellists and asked, from their area of expertise, which science and innovation can improve the health of our coasts, seas and oceans.



As Vice-Chair of the SAPEA Working Group on micro- and nanoplastic pollution, **Sabine Pahl** (Professor at the University of Plymouth in the United Kingdom) gave their perspectives on how scientists and other actors can influence people's behaviour to care about the ocean, and what the role of policies in this behavioural change would be. She mentioned that plastic pollution attracted policy attention because it is concrete and easy to grasp. However, to find solutions, one needs a systems perspective with an interdisciplinary approach, working with industry and using societal dynamics to make a change. She also highlighted that policies based on incentives shouldn't be the only option to cope with the plastic pollution problem.

"We don't have plastic pollution deniers yet, so we can really solve this problem easier than others."



Bart Vandewaetere (Head of Corporate Communications and Government Relations at Nestlé Europe, Middle East and North Africa) described how Nestlé is committed to have zero environmental impact across their operations by 2030. He reminded the conference that plastic is a useful material, but the question is what we do with it after use? He stressed the need for valuing packaging correctly, by investing in re-usable packaging and increasing demand for recycled plastics. He also suggested a new plastic trade system, similar to the emission trade scheme, to improve collection and recycling. He concluded by highlighting the importance of behavioural change, and that Nestlé is making a statement to its employees by committing to change and facilitating activities, like organising beach clean-ups with employees.

"Companies can make some difference in the sustainability debate."

Maria Lodovica Gullino (Professor at Università di Torino in Italy) the Coordinator of the Horizon 2020 project EMPHASIS, presented their main results on how to manage agriculture pests and the links to the marine environment. She highlighted the need to manage the high number of pests (insects and weeds), and that new pests continue to arrive from all over the world and invade the land. How management of these pests in coastal agriculture could be an important way to reduce pollution of oceans and seas. She described the evolution in the development of pesticides, that they are now less toxic for humans and the environment, and that they can only be applied sustainably due to stricter regulations. She stated that the use of biocontrol agents, and nourishing phosphates and silicates to boost plants' natural defense mechanisms, could be an opportunity to manage pest more effectively which are more compatible with the environment.



"Healthy soil will lead to healthy water, so more collaboration between land and sea is necessary in the future."



The Coordinator of the International Centre for Advanced Studies on River-Sea Systems - ESFRI DANUBIUS-RI, **Adrian Stanica** (Director General of GeoEcoMar in Romania) stressed the importance of dealing with rivers and seas as an integrated system. However, the connections are still not very clear. He explained that the ESFRI DANUBIUS-RI aims to provide scientific interdisciplinary support to answer questions about the boundaries between rivers and seas, and the different sources of pollution affecting the environment, such as microplastics coming from washing textiles or emerging pollutants like pharmaceuticals. He concluded that science has been providing solutions, mainly on avoiding human destruction of the environment, and science can help to understand how nature deals with pollutants. He added that researchers have to better communicate their results and conclusions, especially on how new materials currently being developed would ultimately influence the environment.

"The biggest tragedy is that we don't know what we don't know."

An open discussion followed on the importance of reducing waste and the current recycling systems, including the unwillingness to change, expectations of recyclability and the difference between the European extended producer responsibility principle and that of the rest of the world. Discussion also included the scarcity of impact studies on pesticides and herbicides in the marine environment, as well as the unclear process of priority setting for tackling problems. The difference between strong organic production regulations, compared to less stringent regulation in the transport, packaging and marketing industry was also discussed.



Evening Session: Research Vessels in the European Ocean Observation landscape

The Chair of the European Global Ocean Observing System – EuroGOOS, **George Petihakis** (Research Director at the Hellenic Centre of Marine Research – HCMR in Greece) introduced the short session on Research Vessels in the European Ocean Observation landscape. He stated that Research Vessels are essential to collect ocean data needed to understand changes and impacts in the ocean and to ensure the sustainability of our seas, especially as policies like the Marine Strategy Framework Directive and the Sustainable Development Goals put extra pressure on nations to monitor and understand their waters. He explained that the European observing and monitoring capacity is highly developed, but also highly fragmented. For this reason, the European Ocean Observing System (EOOS) was established as a coordinating framework to align European observing strategies. He described Research Vessels as platforms and support hubs for other components, as well as a tool to help to operationalise the observing system. Finally, he highlighted the new challenges of communication and connections of observing systems with the shore for efficient data transfer and analysis.



"There has been an evolution in science and technology for how we observe the ocean. Now we need to address fragmentation."



The co-Chair of the EMB Working Group on Research Vessels, **Valérie Mazauric** (Deputy Director of the Brittany Center of Ifremer, France) presented the main recommendations of the soon to be published (Autumn 2019) EMB Research Vessels Position Paper, in collaboration with the European Research Vessel Operators – ERVO. This position paper reviews the current status of the European research vessel fleet, assesses the role of research vessels as part of EOOS and explores options for future use. She stated that research vessels are a key research infrastructure for conducting marine science and for ocean observations. She stressed that Europe has a very capable research vessel fleet which should continue to be modernized and renewed as the age of the fleet (on average 25 years) is an issue. She highlighted that the research fleet has increased its capabilities in the last 10 years and that the number of underwater and surface vehicles and the number of countries owning these instruments have also grown substantially. She listed options for improving efficiency, such as: developing common training for crews and shore-based staff, increasing transnational ship access (in particular for deep sea and Polar research vessels which exist in a limited number) for all researchers to make efficient use of resources, and improving vessels with the latest technologies to ensure faster access to ship-board data in real time.

"Research vessels should be able to support the next technological developments as described in Navigating the Future V."

Tuesday, 11 June 2019

Session 3: Bringing sea basin communities together

A key message from this session is that collaboration between the different sea basin initiatives must and will continue, but processes to facilitate this collaboration are lacking and must be found. National willingness to implement common agreed research priorities was highlighted as the key to success of sea basin collaboration.

The session moderator, **Wendy Watson-Wright** (CEO of the Ocean Frontier Institute in Canada) introduced the session by referring to the importance of creating impact for society and bringing the strong and effective global community together to ensure the sustainability of ocean resources. She then described the activities of the Ocean Frontier Institute, including its Ocean School, a free online educational experience, and its collaborations with European North Atlantic countries. Finally, she introduced the speaker of the session.



"Collaboration is essential to provide solutions to complex issues that cannot be solved by one partner alone."



Ana Teresa Caetano (Policy Officer at the Healthy Oceans & Seas Unit from Directorate-General for Research and Innovation, European Commission) presented the research and innovation efforts from the European Commission to support the European Union (EU)'s sea basin regional strategies. She stated that Horizon Europe will be built through partnerships and co-design, to enable a consolidated response and leadership in supporting sustainable development including the Agenda 2030. She explained that the EU started these partnerships based on common knowledge gaps, legislation needs and policy commitments. Designed with Member States, existing strategic research agendas for sea basins, in line with the sea basin strategies, have been launched in the last years, and the European Commission supports research and innovation collaboration around these basins through actions such as BANOS (Baltic, North Sea), AANCHOR (Atlantic), AORA (Atlantic), BlueMed (Mediterranean) and Black Sea Connect (Black Sea). She then listed the 3 main drivers of Horizon Europe: climate change, the Sustainable Development Goals, and boosting EU competitiveness and growth. She concluded by emphasising that co-design is the guiding principle of the Mission on Healthy Oceans, Seas, Coastal and Inland Waters, and that the Mission Boards that will design the missions will be presented at the European Research and Innovation Days in September 2019.

"Collaboration starts with trust building initiatives."

On behalf of **Yonah Seleti** (Chief Director at the Department of Science and Technology in South Africa), who was unable to travel to the conference, Sheila Heymans presented the South Atlantic marine research landscape from the South African perspective. She explained that South African marine research is in line with the vision of the Ocean Decade and that South Africa have undertaken long-term ocean and coastal monitoring through International Oceans Observations Collaborative Platforms and government and academic research institutions. She also highlighted that South Africa is signatory of the Belém Statement and a driving force of the South-South Framework for South Atlantic Ocean Cooperation.



"Different sea basins have different characteristics, but there will always be a need for research collaborations."

Opening the panel discussion, **Wendy Watson-Wright** asked the panelists how they see sea basin initiatives/partnerships evolving and how these should be integrated at International, European and national level.



Fabio Fava (Professor at the University of Bologna in Italy), representing the BLUAMED initiative, described research collaboration in the Mediterranean Sea, where countries have developed a joint research agenda and now adoption at the bordering Mediterranean countries is being promoted. Countries with the same or complementary priorities work together using EU funds, and 11 countries in the Mediterranean Sea are working together to launch a pilot project for a plastic free and healthy Mediterranean. He highlighted the importance of working together with other sea-basin initiatives.

"Collaborating with countries with the same priorities will help us a lot to work towards joint actions and bigger impacts."

Sofia Cordeiro (Coordinator of the Ocean Programme at the Fundação para a Ciência e a Tecnologia – FCT in Portugal), representing the All-Atlantic Ocean Research Alliance, stated that it doesn't have a strategic research agenda as other European sea basins do, but it does have political agreements with other countries beyond the EU: the Galway (EU, Canada and USA) and Belém (EU, Brazil and South Africa) Statements and cooperation agreements with Argentina and Cape Verde. She explained that the challenges for all European sea basins are quite similar, however integration is challenging because of different national priorities. The All-Atlantic Ocean Research Alliance has a common goal of enhancing the cooperation in marine research and innovation in the whole Atlantic with societal impacts. She further added that the Alliance is contributing to the UN Decade of Ocean Science for Sustainable Development through promoting knowledge on the Atlantic Ocean and joint transatlantic activities, gluing several initiatives that already exist. The All-Atlantic Ocean Research Alliance initiative, she concluded, is helping to build an All-Atlantic Ocean Community where different stakeholders get involved in defining and implementing joint transatlantic actions for the benefit of the Atlantic society.



"We need to align Research and Innovation agendas and communicate more to society for the Ocean Decade."



Andris Andrusaitis (Acting Executive Director at the BONUS Secretariat EEIG), representing the Baltic and North Sea Coordination and Support Action (BANOS), described the long-term research collaboration of the Baltic Sea, which was triggered by the principle of cooperating across countries to address questions too big for individual countries to handle. He highlighted that initiating a joint programme, now extended to the North Sea, led to the development of a flexible strategic research agenda, which was adopted by all countries.

"We should not create a bubble; we should create an alliance of regional sea programmes for our common good."

Baris Salihoglu (Director of the Institute of Marine Sciences at the Middle East Technical University – METU in Turkey), representing the Black Sea initiative, stated that the European Black Sea Strategic Research and Innovation Agenda has recently been launched and that Black Sea Connect will support current initiatives scientifically, technically and logically to align with the agenda. He explained that the agenda is built on four pillars: research, blue economy, infrastructure, and policy enablers, and he called for a focus on how to use innovation in research towards the blue economy and to ensure education and capacity building.



"The Black Sea is natural lab which holds the key to understanding how the global ocean functions, as the ocean was like the Black Sea for 1 billion years."

The subsequent discussion included: the issue of supporting basic biodiversity science in these research collaborations; how to include the private sector in research by looking for synergies at national level to co-design processes; and the role of regional cooperation for capacity building, ocean literacy, alignment of infrastructures, building trust, reorganizing research funding and standards for data sharing and collection. The panellists emphasized the importance of bringing all initiatives together, sharing best practice and strategies, learning from past examples and the need for facilitating this process for growing partnerships across European regions.

Session 4: Oceans and Human Health

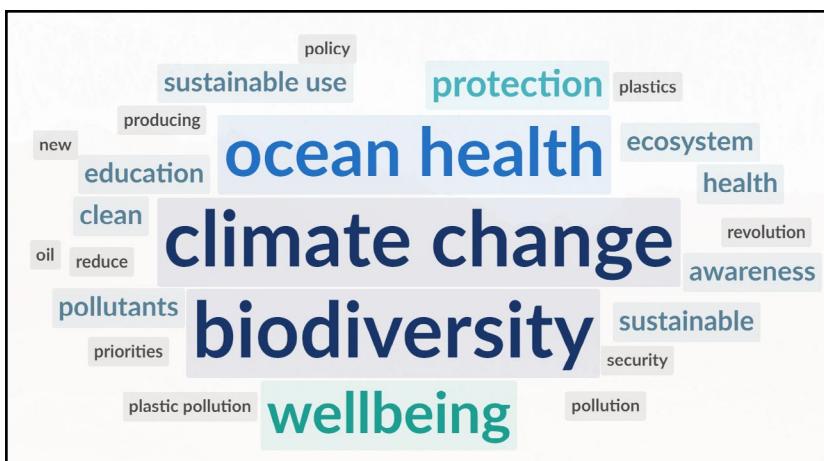
The key outcome of this session was raising awareness of the intrinsic links between the health of the ocean and human health and well-being.



Session moderator **Torsten Thiele** (Founder of the Global Ocean Trust) started the session by briefly presenting the Global Ocean Trust and how the new initiatives in ocean science could be financed. He also highlighted that the health economy is 4 times larger than the ocean economy. He introduced the moderator of the interactive session and the speakers of the session.



The moderator of the interactive session, **Claire Eatock** (Project Manager of the SOPHIE project), challenged the audience to provide their top priorities for protecting public health and the health of the marine environment for a sustainable future using sli.do, and showed the results in a word cloud.



Sam Dupont (Senior Lecturer at the University of Gothenburg in Sweden) presented the risks to Oceans and Human Health including complex interactions and trade-offs. He discussed the importance of setting priorities and that visible issues are not necessarily the issues that will have the greatest impact, and illustrated his point by using examples of climate change and plastic pollution. He highlighted that to achieve the impact we want we need to communicate the targeted information directly to the appropriate audience. This can only be achieved through building scientific information that directly addresses communication needs and focusing on values and solutions.

"Oceans and Human Health is a great framework to identify the priorities we need to address."

Mathew White (Senior Lecturer at the European Centre for Environment and Human Health in the United Kingdom) presented the benefits for Oceans and Human Health and how the marine environment influences how we feel and behave. He acknowledged the risks presented by Dr Sam Dupont, but stated that the idea is not to scare people away from the sea where they can gain benefits. He elucidated that the benefits of living near the sea have been studied for centuries in bathing hospitals around Europe, and increased physical and mental wellbeing was reported when people were closer to the coast due to increased physical activity and positive emotions, especially for lower income citizens. He also showed studies revealing a positive correlation between the state of the environment and perceived human health. However, not all countries reported the same results, and where people spend their time and accessibility to the coast have an influence. He highlighted the need to work with planners and local communities to investigate their needs.



"The marine science community is really supportive of Oceans and Human Health, but the medical research community not so much. And they have a bigger budget."

Opening the panel discussion, Torsten Thiele asked the panellists how to get people to understand that Ocean and Human Health are intrinsically linked, and what has enabled good collaboration based on their experience?



Lora E. Fleming (Director of the European Centre for Environment and Human Health in the United Kingdom) explained that in Europe there are more interactions around benefits and opportunities and that the biggest challenge is bringing public health and medical colleagues together to discuss the links between Oceans and Human Health. She concluded that the marine community can help by sharing information on how to increase public access to the marine environment in a sustainable way.



Katja Philippart (Senior Scientist at the Royal Netherlands Institute for Sea Research – NIOZ) recognized the necessity of solution-oriented research. She explained that she became involved with Oceans and Human Health research thanks to her background as a marine ecologist specializing in bivalves and working on seafood projects. Her current research looks at the effect of environmental variations on marine organisms, specifically the impacts of climate change on coastal ecosystems.

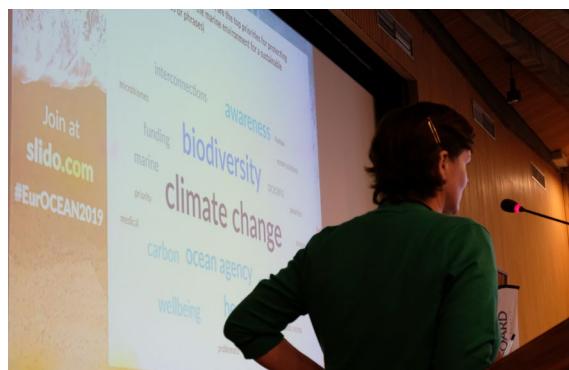


Easkey Britton (Researcher at the Whitaker Institute, National University of Ireland Galway – NUIG) said that evidence of the connection between Ocean and Human Health is increasing, but the main problem is the lack of connection between natural environments and humans. As a marine social scientist her main interest is the process of change and how we engage with others addressing the same challenges. Interdisciplinary research projects like Horizon 2020 SOPHIE (Seas, Oceans & Public Health in Europe) help to improve collaboration and she called for a better connected global ocean community, amplifying stories that address the importance of access, diverse needs and abilities.



Timothy Adams Bouley (Ocean Biotechnology Entrepreneur) reminded us that life evolved in water and that all processes that sustain life depend on salt water. He mentioned that the ocean is valuable for medicine and biotechnology, and it is critical to make people aware of this fundamental connection. He highlighted that people from the coast and indigenous populations know the intrinsic connection between Oceans and Human Health, and that most scientists and policy makers only partially understand these connections. Finally, he highlighted the need to accelerate synergies between scientists, policy makers and companies focusing on these connections.

The discussion then focused on the balance between new technologies and classic research techniques in an environment with limited resources, the balance between promoting coastal environments for recreation and the threats from increasing human pressures, and how to influence current policy developments and finance in a timely and efficient manner. Finally, the panellists highlighted their priorities for advancing Oceans and Human Health research: a new space for marine biotechnologies, empowerment and reconnection to nature, land sea interfaces taking into account climate change, support for early career scientists, and proper ocean finance architecture.



Claire Eatock closed the session by announcing the three priorities of the upcoming Strategic Research Agenda for Oceans and Human Health in Europe: nutrition and food from the ocean in a changing world; mental and physical health and well-being at the coast; and ocean biotechnology and biodiversity. The Agenda will be launched at the Oceans and Human Health Conference on 30-31 March 2020 in Brussels (Belgium).

Session 5: National perspectives for marine science contribution to the SDGs



The session moderator, **Peter Herzig** (Executive Director of the GEOMAR Helmholtz Centre for Ocean Research Kiel in Germany), gave his perspective that the European marine science community has the tools to scientifically support sustainable use of seas and oceans by providing informed guidelines for governance of the oceans based on evidence, and contribute to make the UN Ocean Decade of Ocean Science for Sustainable Development a success. He introduced the country representatives that then described their national perspectives, plans and programs for ocean science in Europe to contribute to the Ocean Decade and the Sustainable Development Goals.

"The Ocean Decade is a once-in-a-lifetime chance to ensure that marine science is visible to society"

Joachim Harms (Head of Marine Research, Geosciences, Ship and Marine Technologies Department at the Project Management Jülich – PtJ), spoke on behalf of Rudolf Leisen, Head of the Marine, Coastal and Polar Research Department at the Federal Ministry of Education and Research in Germany. **Germany** will hold the Presidency of the Council of the European Union in late 2020, and Joachim Harms described that their plans, based on the benefits of European cooperation in education and research, will shape the coming decade of European research and education policy. He highlighted that digitalization will have fundamental and lasting effects on society, will change demands of vocational education and training, and has already revolutionized ocean sciences. He reiterated the support of Germany to the Joint Programme Initiative "Healthy and Productive Seas and Oceans" and its tools to create a European research landscape by granting smaller countries with lower research budgets access to larger research facilities. He concluded that Germany committed its framework programme "MARE:N" for coastal, marine and polar research to the UN Decade of Ocean Science for Sustainable Development, and that Germany will host the kick-off conference for the Ocean Decade in Berlin in early 2021.



"Germany fully supports an Open Access Policy on Data Management and Publication."



José Paulo Esperança (Vice-President, Foundation for Science and Technology – FCT) on behalf of Manuel Heitor, Minister of Science, Technology and Higher-Education of Portugal, gave the perspectives of **Portugal**, which will hold the Presidency of the Council of the European Union at the onset of the Ocean Decade in early 2021. He mentioned that Portugal is highly committed to marine science and ocean sustainability, and their Presidency will enhance integration and convergence in marine research and innovation as a transversal area. He highlighted the Portuguese efforts in science diplomacy by developing the AIR centre, a collaboration framework in the Atlantic Ocean. He concluded that collaboration with industry is key, and presented the Collaborative Laboratories, a new partnership with industry and society for market driven innovation and creating skilled jobs.

"We should, perhaps, look at the world map including the Exclusive Economic Zones (EEZ); many nations have large EEZs that should be preserved with care."

Cyril Moulin (Deputy Director of the Institut National des Sciences de l'Univers - Centre National de la Recherche Scientifique – INSU-CNRS in France) stated that **France**, with the second largest EEZ in the world, considers Sustainable Development Goal 14 very important. He listed important activities contributing to the upcoming decade: the national strategy for sustainably managed ecosystems; the biodiversity plan to develop policy for the preservation of the shoreline and elimination of plastic waste at sea; overall support for adaptation to climate change through nature based solutions, sustained and integrated ocean observation and regional seas collaboration and; their backing of ambitious international initiatives such as the Paris Agreement and the Plastic Pollution Coalition. He concluded that the main French institutions involved in marine research are currently in the process of defining a national roadmap for 2020 in the framework of the Ocean Decade with priorities on three specific areas: overseas territories, the deep ocean and Polar oceans.



"France, having deployed activities on all world oceans, will actively contribute to the Ocean Decade."



Niall McDonough (Director for Policy, Innovation and Research Support Services at the Marine Institute in Ireland) noted the importance of Navigating the Future V, published at a crucial time in the preparation for Horizon Europe and the Ocean Decade. He highlighted the preparations in **Ireland** towards achieving the Sustainable Development Goals both nationally and internationally, with Ireland's new international policy Global Ireland, and their A Better World Initiative. This initiative focusses on the implementation of the SDGs via awareness raising, participation, support and policy alignment. He listed some Irish science activities supporting SDG14, such as funding for ocean acidification research and participation in calls for investigating microplastics. He concluded that there is a very strong engagement for working together to reach the capacities needed to achieve the SDGs.

"Ireland is structuring national policy making around the Sustainable Development Goals"

Giuseppe Valditara (Head of Higher Education and Research Department at the Ministry of Education, University and Research in Italy) noted the importance of the blue economy for **Italy**, a country with a significant coastline. He highlighted the priority of the coasts for creating future blue jobs and innovation. He mentioned Italy's activities in the Polar region and the Mediterranean, including a new research icebreaker named after Laura Bassi, and a pilot action for a plastic-free healthy Mediterranean Sea. He expressed the urgent need to extend research collaboration beyond the EU, outlined the Italian leadership in science and research diplomacy holding the Presidency of the 5+5 Dialogue in Research, Innovation and Higher Education, and mentioned that the next European Science Open Forum (ESOF 2020), to be hosted in Trieste, will have Blue Planet and Blue Society as its main priorities.



"Italy is actively redirecting its research and innovation and training priorities in the marine and maritime sectors to accomplish the Sustainable Development Goals."



Jan Busstra (Water and Marine Director at the Directorate-General Water & Soil Policy of the Ministry of Infrastructure and Water Management in the Netherlands) talked about the importance of alliances and partnership outside the marine community in order to be successful. He mentioned that **the Netherlands** has signed up for the SDGs. Using offshore wind farms as an example, he stated the need to balance requirements for Good Environmental Status and the Blue Economy, and highlighted the Marine Spatial Planning game as a powerful tool to do so. He declared that the Netherlands is sharing experiences on climate adaptation with 15 large deltas around the world, and has become a member of the International Alliance to Combat Ocean Acidification. He mentioned other Dutch programmes, such as the coral restoration programme in the Dutch Caribbean and the NICo programme, a partnership between universities and research institutes on ocean issues. He recommended aligning with political priorities to help ocean research and policies, and that the Netherlands are planning to incorporate an ocean research programme into its national research agenda.

"70% of the world is not on the agenda of the general public."

Christina Abildgaard (Director of the Department for Bioresources and Environmental Research at the Research Council of Norway) replaced Fridtjof F. Unander, Executive Director of the Resource Industries and the Environment at The Research Council of Norway, and highlighted the ambitions of **Norway** to achieve SDG14. She mentioned that Norway will host the Our Ocean conference in October 2019 and highlighted the initiative of the Prime Minister to invite 14 Coastal State leaders to the High-level Panel for a Sustainable Ocean Economy, which will report to the UN Ocean Conference in 2020. She stated that the Research Council of Norway has a sustainability strategy, which enters in all research programmes, that it supports different centres of excellence promoting sustainability, and has a new icebreaker research vessel for Polar research. She echoed the words of Director John Bell that science should give courage to politics and should communicate hope and courage to implement its results.



"The Ocean Decade priorities will reflect on national priorities in Norway."



Simion Nicolaev (Director General of the National Institute for Marine Research and Development "Grigore Antipa" in Romania) recapped the history of research cooperation in the Black Sea, with the signature of the Bucharest Convention as a milestone. Moving forward, he mentioned the adoption of the Black Sea Common Maritime Agenda and Strategic Research and Innovation Agenda for Black Sea earlier this year, which will be the pillar to follow the 2030 Agenda in the Black Sea. He stated that in **Romania** both marine research institutes, Grigore Antipa and GeoEcoMar, are contributing to the Sustainable Development Goals in the Black Sea, and are in line with the opportunities for cooperation between scientific communities of the Black Sea.

"Romania has the scientific and technical potential to implement the 2030 Agenda."

Colin Moffat (Scottish Government's Chief Marine Sciences Advisor), highlighted that the Scottish vision for sustainable marine and coastal environments was developed 10 years ago, and that **Scotland** will achieve many of the goals of SDG14. He stated that the SDGs are an opportunity to talk among the natural sciences and between the natural, economic and social sciences. The National Performance Framework, which was committed by the First Minister of Scotland, has mapped the 17 goals onto the national outcomes and triggered two new indicators, one for cleanliness and another for biodiversity. He then highlighted that the Scottish Marine Science Strategy is currently being updated and that it will involve young researchers in the decision making.



"We cannot manage the marine environment; we can only manage the human impact."



Closing session – Ensuring a sustainable ocean by 2030

Session moderator, **Gilles Lericolais** (Director for European and International Affairs at Ifremer in France) reminded the public about the emergency humans are facing due to climate change, and informed participants that this will be discussed the following day at the G7 Science Meeting. He then introduced the speakers of the closing session.



Ricardo Serrão Santos (Member of European Parliament) called for knowledgeable citizens, educated through all media, from science to art and culture, so that society can help science to combat fake news and promote sustainability and inclusiveness. He emphasised that to tackle global concerns, good governance can reverse some of the threats if science can advise the proper legislation. He highlighted that the European Union is responding to some of these challenges with policies, such as the new Horizon Europe missions and the Circular Bioeconomy. He then handed-over the poster competition prize to Maria Kazour (University Littoral Côte d'Opale, France) for her poster entitled: Sources of microplastics pollution into the marine environment: Importance of wastewater treatment plants and coastal landfills. More on the Early Career Poster competition can be found in Annex 2.

"Good governance needs science advice."



In a video message, **Peter Thomson** (UN Special Envoy for the Ocean) reminded the audience of the critical role that science will play in facing our shared ocean challenges, urged the global community to support the Ocean Decade, and encouraged the EurOCEAN 2019 participants to become ambassadors and champions for the Ocean Decade.

"The Ocean Decade is a historic opportunity to take ocean science into a new era."



Lisa Emilia Svensson (Former Swedish Ambassador for Ocean), gave her perspectives as the former Director for Ocean at UN Environment (UNEP) on the difficulties in bringing science and policy together, but stressed the importance of succeeding to ensure science is visible in the political space. She also reminded the audience that science is not an end in itself; it needs to create impact and have a dialogue, inform and educate politicians. She recommended to fit science advice in the national context and to be innovative in involving the finance sector. She concluded that if we know what we want to achieve, money is (often) not the greatest problem.

"Maybe it is time to act on the science that we have!"



Vladimir Ryabinin (Executive Secretary of the Intergovernmental Oceanographic Commission (IOC) of UNESCO) stated that ocean science needs to progress in understanding ocean ecosystems, including advancing biological observations but also economic and social observations, to work towards coupled and integrated models to meet user requirements. He praised Navigating the Future V as an important supporting document for the Ocean Decade and stressed that science is starting to deliver on what society requires, but we need to move to the next step. He hoped that the UN Ocean conference in Portugal in 2020 will move ocean science into action.

"The Ocean Decade is a historic opportunity to take ocean science into a new era."

Ana Teresa Caetano (Policy Officer at the Healthy Oceans & Seas Unit from Directorate-General for Research and Innovation, European Commission) mentioned that the Directorate-General for Research and Innovation was going through a major reorganisation to reflect the important role of science in society, and to align with the objectives of European Union's research programmes, including Horizon Europe. She said that we are facing the dilemma of sustainable growth and growing sustainably, as coastal communities are increasing and need accurate and timely information on the state of ocean resources. She stated that the EU is fully committed to achieving the Sustainable Development Goals and that science can set the transformation we need.



"We need to change, not the ocean."



Alba González Vega and **Liam Lachs** (EMB Young Ambassadors) gave a shared speech on the vision for future marine science on behalf of the young marine scientists present at the conference. They underlined that the decisions made and the actions taken during the coming Ocean Decade will set the precedent for the future of our oceans. They emphasised five key issues that they saw as fundamental to a sustainable future: open access science; the science policy interface; stakeholder engagement and science communication; education; and gender equality. They concluded that in the decades to come, when looking back on these challenging times, they would like to be seen as the ones who stood up, took action, and did all they could to ensure a sustainable future for themselves and for generations to come.

"In the future, we must reconsider the meaning of pristine and redefine conservation objectives to match our degrading environment."

Closing the conference, **Jan Mees** (Chair of the European Marine Board) emphasized the engagement of the European Marine Board (EMB) in the priorities of the Ocean Decade and Horizon Europe, including its mission, and that the EMB will actively contribute and keep underlining the gaps in our knowledge of the ocean. He thanked the speakers, moderators, panellists and participants for their contributions and discussions, and acknowledged all people who made the conference possible including the organisers from the EMB, the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO), the European Commission, Directorate-General for Research and Innovation, and the special input received from the Romanian Black Sea Research Consortium and the Romanian Ministry of Research and Innovation. He additionally thanked the sponsors of the conference, the National Oceanography Centre (NOC), the Université de Bretagne Occidentale (UBO), the Institut Français Recherche Exploitation de la Mer (Ifremer), the Centre national de la recherche scientifique (CNRS), the Norwegian Marine University Consortium (NMUC), and the Marine Institute Ireland. He then formally closed the conference.

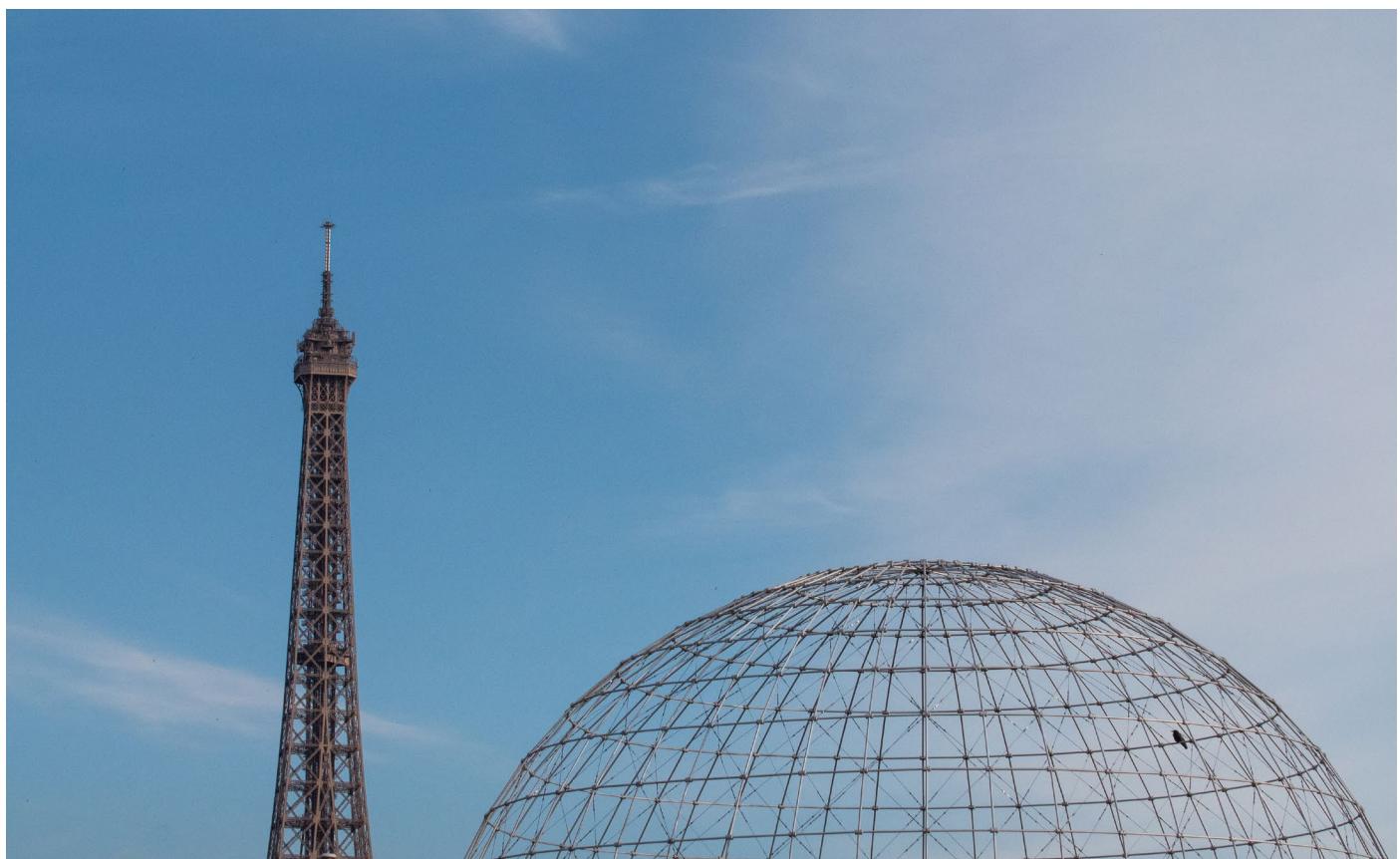


Annex 1: EurOCEAN 2019 organizing committee

The EurOCEAN 2019 organising committee members were selected, invited and confirmed in June 2018:

- **Ángel Muñiz Piniella**, European Marine Board secretariat
- **Sheila JJ Heymans**, European Marine Board secretariat
- **Jan Mees**, Flanders Marine Institute (European Marine Board Chair)
- **Vasile Patrascu**, Romanian Black Sea Research Consortium (EMB member)
- **Adrian Stanica**, Romanian Black Sea Research Consortium (EMB member)
- **Elena Stoica**, Romanian Black Sea Research Consortium (EMB member)
- **Simion Nicolaev**, Romanian Black Sea Research Consortium (EMB member)
- **Viorel Vulturescu**, Romanian Ministry of Research and Innovation
- **Ana Teresa Caetano**, European Commission, Directorate-General for Research and Innovation
- **Sigi Gruber**, European Commission, Directorate-General for Research and Innovation
- **Simonetta Secco**, IOC-UNESCO
- **Vladimir Ryabinin**, IOC-UNESCO
- **Salvatore Arico**, IOC-UNESCO

Additional organising support include the EMB Secretariat, EMB members, the selected poster presenters and the EMB Young Ambassadors.



Annex 2: Posters competition

In early 2019 the European Marine Board (EMB) opened a call for abstracts from PhD students or post-doctoral scientist to present a poster at the EurOCEAN 2019 conference. They were required to present an innovative and eye-catching printed poster on one of the main themes of the conference (sustainable marine resources, the land perspective on the ocean, new pollutants in the marine environment, or Oceans and Human Health).

The best posters were selected by the EMB Secretariat for participation at the EurOCEAN 2019 conference based on the following criteria:

1. Clear and written in language that is easy to understand.
2. Use of language, which is engaging and excited curiosity in the topic.
3. Focus on one of the main themes of the conference (Sustainable marine resources, the land perspective on the ocean, new pollutants in the marine environment, or Oceans and Human Health).
4. Ability to present their research in an innovative and eye-catching poster and to reflect that in the abstract.

Based on these criteria, the 10 best abstracts were invited to provide a poster that was displayed throughout the 2-day conference and to give a 1-min pitch presentation, in a dedicated session introduced by Yves-Marie Paulet (Professor at Université de Bretagne Occidentale in France). All the posters are available on the EurOCEAN website: <http://www.euroceanconferences.eu/eurocean-2019-poster-competition>



Simona Araci, University of Edinburgh,
"Biodegradable Soft Robots for Ocean Monitoring".



Jacob Bentley, Scottish Association for Marine Science,
"Co-creating knowledge for sustainable fisheries management:
a case study for the Irish Sea".



Meenakshi Shankar Poti, Free University Brussels,
"The coastal conundrum: conservation-development conflicts
in rapidly developing tropical islands".



Loubna Boutahar, Mohammed V University and University of Seville,
"Biomonitoring of Atlantic semi-enclosed water areas
using new approaches: *Zostera noltei* meadows".



Saara Suominen, Royal Netherlands Institute for Sea Research,
"Anoxic Microbial Oceans: The functioning of an unexplored carbon cycle".



Veloisa Mascarenhas, Institute for Chemistry and Biology of the Marine
Environment - University of Oldenburg, "Underwater Light Availability in fjord
ecosystems: effects of glacial meltwater release".



Maria Kazour, University Littoral Côte d'Opale,
"Sources of microplastics pollution into the marine environment:
Importance of wastewater treatment plants and coastal landfills".



Tainá Fonseca, Centre for Marine and Environmental Research - University of Algarve, "Toxic effects of anticancer pharmaceuticals in the marine environment:
An invisible pollution".



Rebecca Shielock, Plymouth Marine Laboratory and University of Exeter,
"Can improvements to coastal environments improve the well-being of local
communities?"



Alexander Hooyberg, Flanders Marine Institute,
"Better health and vitality when living near the coast in Belgium".



During the conference, the public judged the oral and poster presentations and voted via a Sli.do poll. The poster with the highest votes (42%) was by Maria Kazour (University Littoral Côte d'Opale, France) entitled *Sources of microplastics pollution into the marine environment: Importance of wastewater treatment plants and coastal landfills*. Ricardo Serrão Santos, Member of the European Parliament handed over the prize to Maria Kazour in the closing session of the conference. The prize was a commissioned piece of art from Camilla Brendon¹¹, a mixed media and installation artist.

¹¹ <https://www.camillabrendon.com/>

Annex 3: Networking, exhibition and outreach

EurOCEAN 2019 provided the opportunity for marine and maritime stakeholders to network with conference participants, and several organisations and networks had the opportunity to exhibit their work at the conference:

- European Marine Board - EMB
- Joint Programming Initiative Healthy and Productive Seas and Oceans - JPI Oceans
- European Global Ocean Observing System - EuroGOOS
- EuroMarine
- European Marine Observation and Data Network - EMODnet
- Science Advice for Policy by European Academies - SAPEA
- Global Oceanic Environmental Survey - GOES Foundation



The visual identity of the conference (logo, flyers, etc.) was developed by graphic design students from the Arteveldehogeschool in Gent (Belgium), with additional support from Zoek nv.

A Press Release¹² was produced announcing the launch of Navigating the Future V at the EurOCEAN 2019 conference to inform media about the key messages from the EMB flagship publication. The EMB secretariat would like to extend its gratitude to Lucy Cox (NOC) and Dominique Simon (Universités Marines) from the European Marine Board Communication Panel and the additional support from the communications team of Ifremer and CNRS.

A Twitter hashtag for the EurOCEAN 2019 conference (#EurOCEAN2019) was assigned for use throughout the conference. Images and tweets from the conference can be viewed online¹³.

On 12 June 2019, Denis Bailly, coordinator of Ocean University Initiative for a UNU Ocean institute in France gave a speech during the morning coffee break where he called for France to support a United Nations University in Brest on ocean governance, to create a mechanism for the global oceanographic community to have a voice at the highest level at the UN system, in cooperation with other UN bodies.

¹² <http://www.marineboard.eu/sites/marineboard.eu/files/public/New%20website/Navigating%20future/NFV%20launch%20press%20release%20EMB%20channels.pdf>

¹³ <https://twitter.com/hashtag/EurOCEAN2019>

Abbreviations glossary

EU – European Union

Horizon Europe - European Union Framework Programme for Research and Innovation (2021-2027)

Ifremer - Institut Français de Recherche pour l'Exploitation de la Mer

IOC-UNESCO - Intergovernmental Oceanographic Commission of UNESCO

JPI Oceans - Joint Programming Initiative Healthy and Productive Seas and Oceans

NFV – Navigating the Future V

Ocean Decade - United Nations Decade of Ocean Science for Sustainable Development (2021-2030)

SDGs - Sustainable Development Goals

SDG14 - Sustainable Development Goal 14 "Life below water"

UNESCO - United Nations Educational, Scientific and Cultural Organization

CONFERENCE PROGRAMME

Tuesday, 11 June 2019

08:00 – 08:30 Registration

09:00 – 11:00 **Welcome and opening addresses (Room XI)**

Moderated by **Jan Mees**, Director, Flanders Marine Institute, Belgium; and Chair, European Marine Board

Opening address by organisers

- **Jan Mees**, Chair, European Marine Board
- **John Bell**, Director, Directorate C: Healthy Planet, Directorate-General for Research and Innovation, European Commission

Welcome by the host

Salvatore Aricò, Head, Ocean Science Section, Intergovernmental Oceanographic Commission (IOC) of UNESCO, *on behalf of Vladimir Ryabinin, Executive Secretary, Intergovernmental Oceanographic Commission (IOC) of UNESCO*

World Oceans Day 2019 "Gender and Ocean"

Kirsten Isensee, Programme Specialist, Ocean Science Section, Intergovernmental Oceanographic Commission (IOC) of UNESCO

Opening remarks

- **H.E. Adrian Cioroianu**, Ambassador, Permanent Delegation of Romania to UNESCO
- **Laurent Bergeot**, Head, Research Department, Ministry for the Ecological and Inclusive Transition, France
- **Bernhard Friess**, Director, Directorate A: Maritime Policy and Blue Economy, Directorate-General for Maritime Affairs and Fisheries, European Commission, *on behalf of Karmenu Vella, European Commissioner for Environment, Maritime Affairs and Fisheries*
- **François Houllier**, President Director General, Institut Français de Recherche pour l'Exploitation de la Mer – IFREMER, France

11:00 – 11:15 **Launch of Navigating the Future V (Room XI)**

11:15 – 12:00 Networking and coffee (Mall)

12:00 – 13:00 **Navigating the Future V in the marine science landscape (Room XI)**

Presentation

Highlights from Navigating the Future V - **Sheila JJ Heymans**, NFV editor

Short statements by

- **Anna Jöborn**, Director, Scientific Affairs Department, Swedish Agency for Marine and Water Management, member of the Executive Planning Group of the United Nations Decade of Ocean Science for Sustainable Development (2021-2030)
- **Sigi Gruber**, Head, Healthy Oceans & Seas Unit, Directorate-General for Research and Innovation, European Commission
- **Joachim Harms**, Vice-Chair, Joint Programming Initiative Healthy and Productive Seas and Oceans – JPI Oceans
- **Guillermo Ortúño Crespo**, Ph.D. student, Duke's Marine Geospatial Ecology Lab, and Fellow, Nippon Foundation Nereus Program

Concluding remarks by

- **Edward Hill**, Executive Director, National Oceanography Centre – NOC, United Kingdom

13:00 – 14:30 Lunch (Mall)



14:30 – 15:45

Session 1: Sustainable marine resources (Room XI)

The role of marine science in understanding and sustainably using marine living resources

Moderated by **Mark Dickey-Collas**, Chair of Advisory Committee, International Council for the Exploration of the Sea - ICES

Presentations

- **Science to sustainably harvest ocean resources** – joint presentation by **Xabier Irigoien**, Scientific Director, AZTI (Spain), representing the H2020 SUMMER project; and **Webjørn Melle**, Principal Scientist, Institute of Marine Research (Norway), representing the H2020 MEESO project
- **Science to conserve ocean resources** – **Ann-Katrien Lescrauwaet**, Director of International Relations, Flanders Marine Institute - VLIZ, Belgium

Panel discussion with

- **Carina Keskitalo**, Professor, Umeå University, Sweden; member of the EU Scientific Advice Mechanism (SAM) High-Level Group of Scientific Advisors and lead of the 'Food from the Ocean' Scientific Opinion
- **Kristian Henriksen**, Senior Manager, NCE Aquatech Cluster
- **Isabel Sousa Pinto**, Principal investigator, Interdisciplinary Centre of Marine and Environmental Research – CIIMAR, Portugal; and Co-lead, Marine Biodiversity Observation Network
- **Patrizio Mariani**, Senior Researcher, National Institute of Aquatic Resources - DTU AQUA, Denmark
- **Empty chair**: the moderator will invite a participant from the audience to come up on stage and sit on the chair. This person will be invited to provide his/her perspective, have a short discussion with the other panellists and then leave for another person to take that place.

15:45 – 16:00

Poster 1 min pitch presentations (Room XI)

Hosted by **Yves-Marie Paulet**, Professor, Université de Bretagne Occidentale, Marine Universities – UM, France

- **Simona Araci**, University of Edinburgh, "Biodegradable Soft Robots for Ocean Monitoring"
- **Jacob Bentley**, Scottish Association for Marine Science, "Co-creating knowledge for sustainable fisheries management: a case study for the Irish Sea"
- **Meenakshi Shankar Poti**, Free University Brussels, "The coastal conundrum: conservation-development conflicts in rapidly developing tropical islands"
- **Loubna Boutahar**, Mohammed V University and University of Seville, "Biomonitoring of Atlantic semi-enclosed water areas using new approaches: *Zostera noltei* meadows"
- **Saara Suominen**, Royal Netherlands Institute for Sea Research, "Anoxic Microbial Oceans: The functioning of an unexplored carbon cycle"
- **Veloisa Mascarenhas**, Institute for Chemistry and Biology of the Marine Environment - University of Oldenburg, "Underwater Light Availability in fjord ecosystems: effects of glacial meltwater release"
- **Maria Kazour**, University Littoral Côte d'Opale, "Sources of microplastics pollution into the marine environment: Importance of wastewater treatment plant and coastal landfill"
- **Tainá Fonseca**, Centre for Marine and Environmental Research - University of Algarve, "Toxic effects of anticancer pharmaceuticals in the marine environment: An invisible pollution"
- **Rebecca Shielock**, Plymouth Marine Laboratory and University of Exeter, "Can improvements to coastal environments improve the well-being of local communities?"
- **Alexander Hooyberg**, Flanders Marine Institute, "Better health and vitality when living near the coast in Belgium"

16:00 – 16:45

Networking and coffee (area in front of room XI)

16:45 – 18:00

Session 2: The land perspective for a healthy ocean (Room XI)

The role of marine science in understanding and tackling the problem of new pollutants (including plastics and pesticides) in the marine environment

Moderated by **Julia Schnetzer**, Scientific Coordinator, Ocean Plastics Lab

Panel discussion with

- **Sabine Pahl**, Associate Professor, University of Plymouth, United Kingdom; and Vice-Chair, SAPEA Working Group on micro- and nanoplastic pollution
- **Bart Vandewaetere**, Head, Corporate Communications and Government Relations, Nestlé S.A.
- **Maria Lodovica Gullino**, Professor, Università di Torino, Italy; and H2020 EMPHASIS Project Coordinator
- **Adrian Stanica**, Director General, GeoEcoMar, Romania; and Coordinator, International Centre for Advanced Studies on River-Sea Systems - ESFRI DANUBIUS-RI
- **Empty chair**: the moderator will invite a participant from the audience to come up on stage and sit on the chair. This person will be invited to provide his/her perspective, have a short discussion with the other panellists and then leave for another person to take that place.

18:00

Close Day 1

Group picture

18:00 – 18:30

Evening session (Room XI)

Research Vessels in the European Ocean Observation landscape

Short introduction by **George Petihakis**, Chair of European Global Ocean Observing System, EuroGOOS, and Research Director, Hellenic Centre of Marine Research – HCMR, Greece

Followed by a short presentation by **Valérie Mazauric**, co-Chair, EMB Working Group on Research Vessels, Ifremer, France

18:30 – 20:00

Evening reception (Cafeteria, 7th floor)



Wednesday, 12 June 2019

08:00 – 08:30 Registration

09:00 – 10:30 **Session 3: Bringing sea basin communities together (Room XI)**
Experiences from Europe in bridging sea basin international cooperation in marine sciences and the way forward
Moderated by **Wendy Watson-Wright**, CEO, Ocean Frontier Institute, Canada

Presentation

Research and Innovation to support the EU sea basin regional strategies – **Ana Teresa Caetano**, Policy Officer, Healthy Oceans & Seas Unit, Directorate-General for Research and Innovation, European Commission

Panel discussion with

- **Fabio Fava**, Professor, University of Bologna, and Italian member to the GSO BLUAMED Working Group
- **Yonah Seleti**, Chief Director, Department of Science and Technology, South Africa
- **Sofia Cordeiro**, Coordinator Ocean Programme, Fundação para a Ciência e a Tecnologia – FCT, Portugal
- **Andris Andrusaitis**, Acting Executive Director, BONUS Secretariat (EEIG)
- **Baris Salihoglu**, Director, Institute of Marine Sciences, Middle East Technical University - METU, Turkey

10:30 – 11:00 Networking and coffee (Mall)

Short statement: The Ocean University Initiative for a UNU Ocean Institute in France

11:00 – 12:30 **Session 4: Oceans and Human Health (Room XI)**

Understanding the impacts of a changing ocean on human health
Moderated by **Torsten Thiele**, Founder, Global Ocean Trust

Interactive session with the audience

Presentations

- Risks to Oceans and Human Health – **Sam Dupont**, Senior Lecturer, University of Gothenburg
- Benefits for Oceans and Human Health – **Mathew White**, Senior Lecturer, European Centre for Environment and Human Health, H2020 BlueHealth project

Panel discussion with

- **Lora E. Fleming**, Director, European Centre for Environment and Human Health, H2020 SOPHIE project
- **Katja Philippart**, Senior Scientist, Royal Netherlands Institute for Sea Research - NIOZ
- **Easkey Britton**, Researcher, Whitaker Institute at National University of Ireland Galway – NUIG, Ireland, big wave surfer and founder of Like Water
- **Timothy Adams Bouley**, Ocean Biotechnology Entrepreneur
- **Empty chair**: the moderator will invite a participant from the audience to come up on stage and sit on the chair. This person will be invited to provide his/her perspective, have a short discussion with the other panellists and then leave for another person to take that place.

Round-up and interactive session

12:30 – 14:00 Lunch (Mall)

14:00 – 15:30

Session 5: National perspectives for marine science contribution to Sustainable Development Goals (Room XI)

Introduced and moderated by **Peter Herzig**, Executive Director, GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany

Presentations by next EU Presidencies

- **Joachim Harms**, Head, Marine Research, Geosciences, Ship and Marine Technologies Department, Project Management Jülich - PtJ, *on behalf of Rudolf Leisen, Head, Marine, Coastal and Polar Research Department, Federal Ministry of Education and Research, Germany*
- **José Paulo Esperança**, Vice-President, Foundation for Science and Technology - FCT, *on behalf of Manuel Heitor, Minister of Science, Technology and Higher-Education, Portugal*

Short statements by

- **Cyril Moulin**, Deputy Director, Institut National des Sciences de l'Univers - Centre National de la Recherche Scientifique – INSU-CNRS, France
- **Niall McDonough**, Director, Policy, Innovation and Research Support Services, Marine Institute, Ireland
- **Giuseppe Valditara**, Head, Higher Education and Research Department, Ministry of Education, University and Research, Italy
- **Jan Busstra**, Water and Marine Director, Directorate-General Water & Soil Policy, Ministry of Infrastructure and Water Management, The Netherlands
- **Christina Abildgaard**, Director, Department for Bioresources and Environmental Research, Research Council of Norway, *on behalf of Fridtjof F. Unander, Executive Director, Resource Industries and the Environment, The Research Council of Norway*
- **Simion Niclaev**, Director General, National Institute for Marine Research and Development "Grigore Antipa", Romania
- **Colin Moffat**, Scottish Government's Chief Scientific Advisor for Marine and Co-Chair of Marine Science Co-ordination Committee, Government of United Kingdom

15:30 – 16:30

Closing session – Ensuring a sustainable ocean by 2030 (Room XI)

Moderated by **Gilles Lericolais**, Director European and International Affairs, IFREMER, France

Ricardo Serrão Santos, Member of European Parliament

Hand-Over poster competition prize

Peter Thomson, UN Special Envoy for the Ocean (video message)

Lisa Emelia Svensson, Ambassador, former Director for Ocean, UN Environment

Vladimir Ryabinin, Executive Secretary, Intergovernmental Oceanographic Commission (IOC) of UNESCO

Ana Teresa Caetano, Policy Officer, Healthy Oceans & Seas Unit, Directorate-General for Research and Innovation, European Commission

Our vision for future marine science

Alba González Vega & Liam Lachs, EMB Young Ambassadors

Jan Mees, Chair of European Marine Board

16:30

Close of EurOCEAN 2019



EUROCEAN 2019 Conference co-organised by the European Marine Board, the Directorate-General for Research and Innovation from the European Commission and the Intergovernmental Oceanographic Commission of UNESCO. EurOCEAN 2019 conference is recognised as a contribution to the preparatory phase of the UN Decade of Ocean Science for Sustainable Development (2021-2030).



2021
2030 United Nations Decade
of Ocean Science
for Sustainable Development

The EurOCEAN 2019 organizing committee appreciates the additional support from the Marine Institute, L'Institut Français de Recherche pour l'Exploitation de la Mer (Ifremer), the National Oceanography Centre (NOC), Centre National de la Recherche Scientifique (CNRS), Université de Bretagne Occidentale (UBO) and the Norwegian Marine University Consortium.



European Marine Board IVZW
Belgian Enterprise Number: 0650.608.890

Wandelaarkaai 7 | 8400 Ostend | Belgium
Tel.: +32(0)59 34 01 63 | Fax: +32(0)59 34 01 65
E-mail: info@marineboard.eu
www.marineboard.eu