



**»A boost for sustainable sea and ocean solutions.
Intelligent technologies for the Blue Economy«**

The ocean is the origin of all life on this planet and vital for our survival: it provides 50 to 80 percent of oxygen, stores 20 times more carbon than land sinks, supplies food to more than 3 billion people, ensures the livelihood of coastal communities, and regulates our climate. Given its importance, in particular for the challenges we are facing, it is surprising that we use it as a massive waste dump.

Nina Jensen, CEO, REV Ocean

In 2021, the United Nations' [Decade of Ocean Science](#) took off to support countries in creating improved conditions for the sustainable development of the Ocean, the European Commission adopted a [Communication](#) to promote and realize a sustainable blue economy, and we, after our first meeting two years ago, officially launched the Innovation Platform »Sustainable Sea and Ocean Solutions [ISSS](#)«. During our EMD in my country and UN Ocean Decade activity event, our CEOs signed a Memorandum of Understanding to establish a pan-European collaboration platform between strong and experienced research partners for the responsible utilization of our oceans. The Innovation Platform unites ten research and technology organizations from nine European countries, which share the visions of the UN and the EU, and fully support them with their own vision. We join forces to boost a sustainable blue economy by creating intelligent technologies and materials to facilitate their application and market uptake in industrial processes.

We kicked off with the demands of the Commission's communication and the [UN Ocean Decade](#) to enable open and equitable access to reliable, high-quality, and harmonized ocean data, information, technology and innovation. As our key-note speaker Nina Jensen (REV Ocean) pointed out, we have explored a mere 5 percent and mapped only 20 percent of the ocean to this day. We need to improve our knowledge and understanding, make it more readily available and turn it into concrete solutions. For this purpose, REV Ocean constructs the largest research ship worldwide with high-tech state-of-the-art equipment and open to all researchers, willing to share real-time data directly from the ship. Our panelists debated the importance of reliable and accurate ocean data for better-informed decision-making. The industry and ISSS application area representatives, António Sarmiento (WavEC), Alexandra Neyts (EATiP), and Anssi Mikola (RiverRecycle), and Commission representative Szilvia Nemeth (DG RTD) underlined data sharing as key to solving some of our biggest challenges, i.e., in ocean protection and restoration, climate change mitigation and food security. Risk analyses, value chain assessments or studies of business development opportunities are also highly dependent on the availability of high-quality data. However, and despite its huge availability, the fragmentation and complexity of ocean data, its sensitivity due to its high economic value, and the privacy of data owners hamper its efficient and effective collection, accessibility, consolidation, validation and sharing.

There is a huge need for research-based knowledge about how the enormity of data is validated following a FAIR open data approach, and ultimately translated into reliable services that fit the needs of the industry. How these efforts will be funded and what the willingness is to pay for the services is of course always difficult to foresee.

Alexandra Neyts, Senior Advisor, EATiP

Innovative solutions (e.g., digital twin), credible framework conditions, standardized governance models, reliable infrastructures and cross-sectoral synergies have to be deployed to enable sustainable processes and collaborations. The European Commission supports this notion with the utmost effort, be it with its research funding programs, the EMODnet initiative or Copernicus, but Szilvia also outlined the potential value added of citizen science. Ultimately, the lack of data accessibility leads to a loss of time, money, and resources for all stakeholders since data has to be gathered multiple times and acquired repeatedly. Missing data leads to unnecessary errors. Anssi and António suggested incentives for private businesses for collecting and sharing ocean data during their operations, which could be an award system based on social or sustainability criteria. A more regulative approach could require data gathering and sharing as bycatch to shipping operations.

Be it bycatch, incentive systems, infrastructures, or innovative solutions – ISSS partners are all set to enable and drive evidence-based and better-informed decision-making. Following another demand of the Commission’s communication, which highlights knowledge, research, and innovation as key to Europe’s climate-neutrality in 2050, the protection and restoration of marine ecosystems and sustainable innovations, 19 researchers of all 10 members [pitched their ideas and solutions within ISSS’ three application areas](#) – energy and raw materials harvesting, ocean cleaning, and aquaculture. They shared their contributions to the science we need for the ocean we want, especially regarding the first Ocean Decade Outcome »A clean ocean where sources of pollution are identified and reduced or removed« and third Ocean Decade Outcome »A productive ocean supporting sustainable food supply and a sustainable ocean economy«. It was impressive to see how young researchers all over Europe find cutting-edge solutions for the current challenges related to the sustainable utilization of the ocean.

During our event, we talked whilst showing ISSS actions in contribution to the last of the seven ocean decade outcomes »an inspiring and engaging ocean where society understands and values the ocean in relation to human wellbeing and sustainable development«. We will realize this goal together with our partners from research, industry, politics, and society by sharing our knowledge to create perspectives and spark solutions all over Europe and beyond.