ECONOMIST IMPACT

The 11th annual

WORLD OCEAN Summit & Expo

Turning the tide to a sustainable ocean economy

March 11th-13th | Lisbon, Portugal

Summary

In a phrase adopted by the United Nations, the world faces a “triple planetary crisis” of climate change, pollution and biodiversity loss. Our ocean is heavily affected by this crisis, and its health should be a focal point of all climate action. At the same time, our ocean can help regulate climate systems and tackle biodiversity loss. At the 11th annual World Ocean Summit & Expo, a wide range of ocean stakeholders united to discuss ocean health, industry strategies and ocean-climate solutions in response to this crisis. The following summary highlights conversations on selected high-impact topics from across the summit, which was held for a second consecutive year in Lisbon from March 11th-13th.

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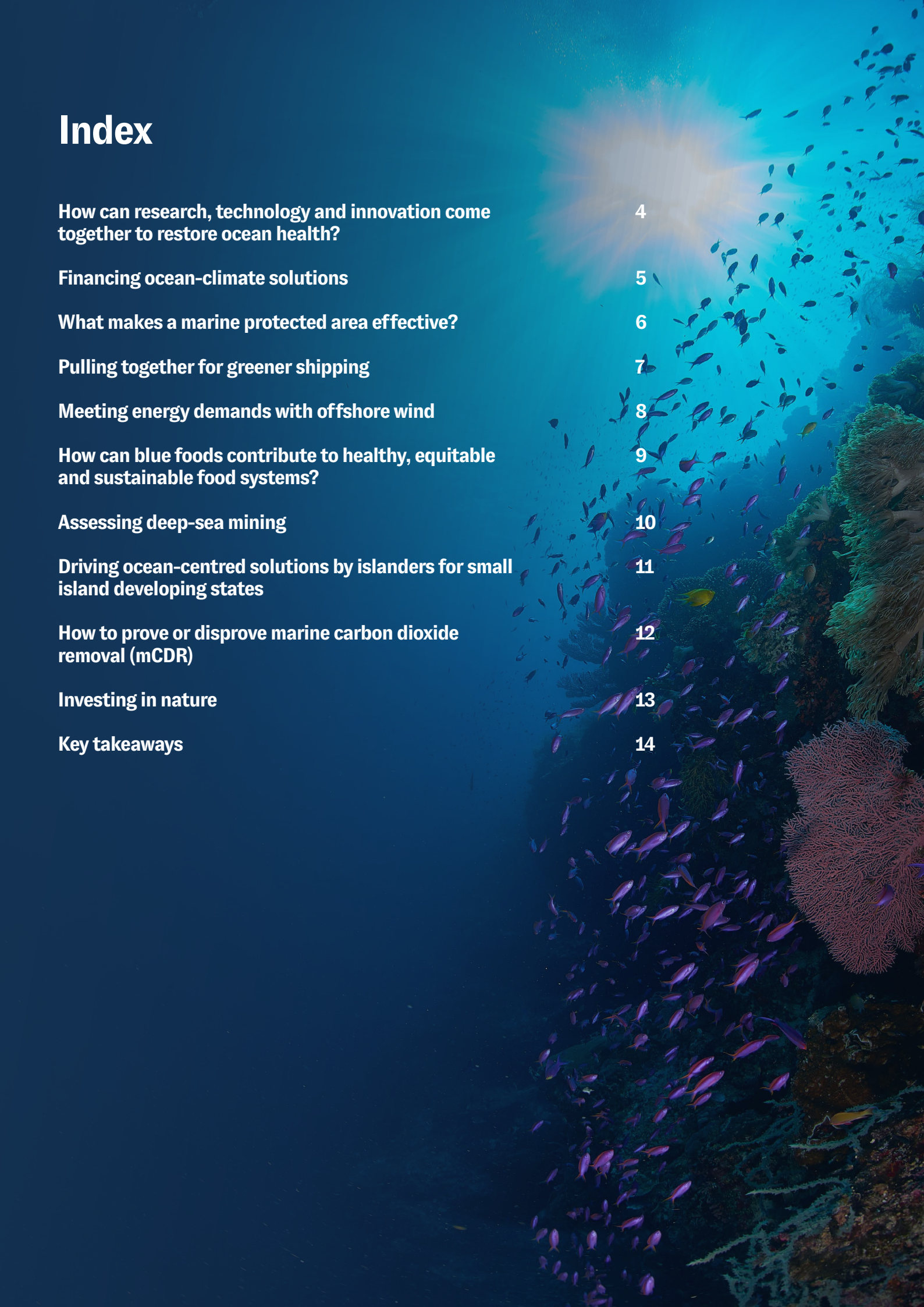
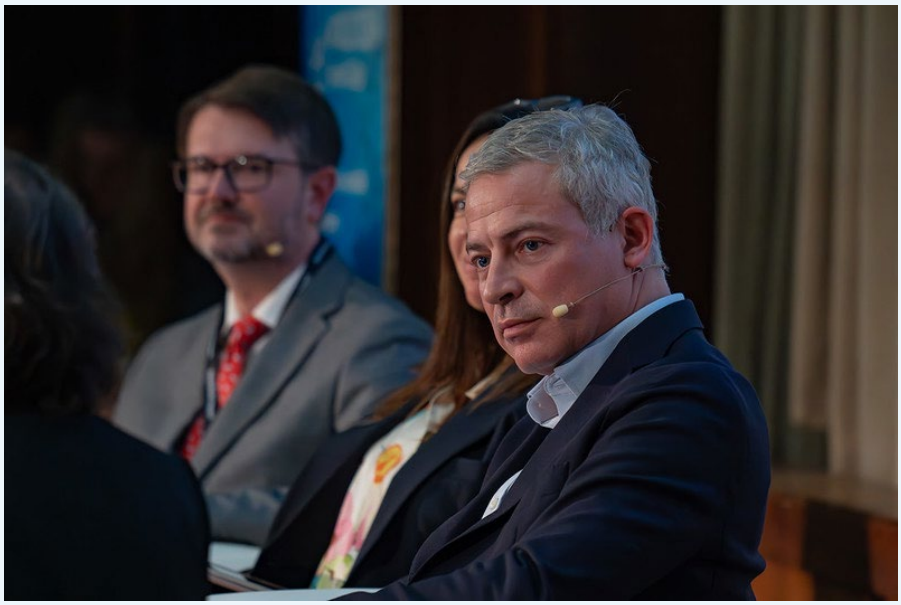


How can research, technology and innovation come together to restore ocean health?



A recurring theme throughout the summit was that we must not only stem damage to the ocean but find ways to rejuvenate it. In a panel discussion on how research, technology and innovation can achieve this, Helena Vieira, a co-ordinating senior researcher at the University of Aveiro in Portugal, observed how universities have become more collaborative. As evidence, she presented successful multi-stakeholder projects in decarbonising shipping and building the blue economy.

Oliver Steeds, director of the Nippon Foundation-Nekton Ocean Census, spoke of innovative ways, such as cyber-taxonomy, to hasten the discovery and documentation of new ocean species. International collaboration across more than 250 institutions has been a central part of the effort.

Robert Hoddenbach of Fugro and Virgil Zetterlind of ProtectedSeas also told of the importance of collaboration in their work. Fugro is contributing 2.6m square kilometres of ocean data to the Seabed 2030 initiative, while ProtectedSeas is documenting regulations in MPAs and working with device-makers to inform boaters and fishers about those rules through the equipment they already use. Panellists emphasised the role of storytelling in inspiring action. “We need to give people positive hope if you want to change things at speed,” said Mr Steeds.

“Nowadays, networking is everything…events like this where you have scientists and industry and everybody working together.”

Helena Vieira
Co-ordinating senior researcher in environmental economics
University of Aveiro

Financing ocean-climate solutions

In a panel on financing ocean-climate solutions, Suzanne Johnson, a senior adviser at the Ocean Stewardship Coalition of the UN Global Compact observed how we have gone from the Seychelles' groundbreaking $15m blue-bond deal in 2015 to an $8bn market for such bonds today. Standards and sustainability rules are starting to build the investment thesis for pension funds and other institutional investors to include these assets in portfolios.

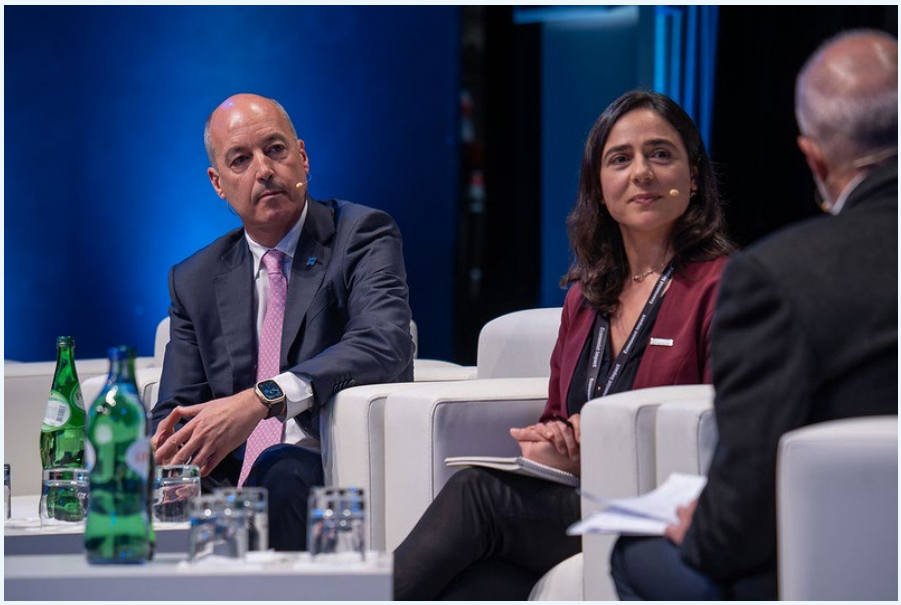
MPAs can find it tough to source impact investors for their initiatives, but Nicolas Pascal, executive director of the Blue Alliance Marine Protected Areas, reported wins in convincing banks to invest not just with impact, but for impact, and to reward bond issuers with more favourable terms in exchange for bringing investors biodiversity protection and emission reductions.

For Aaron Vermeulen, the finance practice lead at WWF International, progress is coming from more banks considering marine conservation when making investments—around 30% in its recent benchmarks, double the year before. Sonali Siriwardena, the global ESG head at law firm Simmons & Simmons, described an appetite for new instruments such as debt-for-nature swaps, which involve the cancellation of debt in exchange for sustainability commitments. Ms Siriwardena underscored the need to quantify the value nature provides: the moment we crack this, she said, markets will see there is an incentive to restore and protect nature.

"We need impact entrepreneurs because this is the basis of any investment. If you want to be paid back, you need to have an entrepreneur that can produce a revenue model and implement it."

Nicolas Pascal
Executive director
Blue Alliance Marine Protected Areas

What makes a marine protected area effective?



"MPAs work and…the longer they are in place, the better they work and the more the benefits accrue. So we need to collect the data, tell the stories and make the case."

Vera Coelho
Deputy vice-president, Europe
Oceana

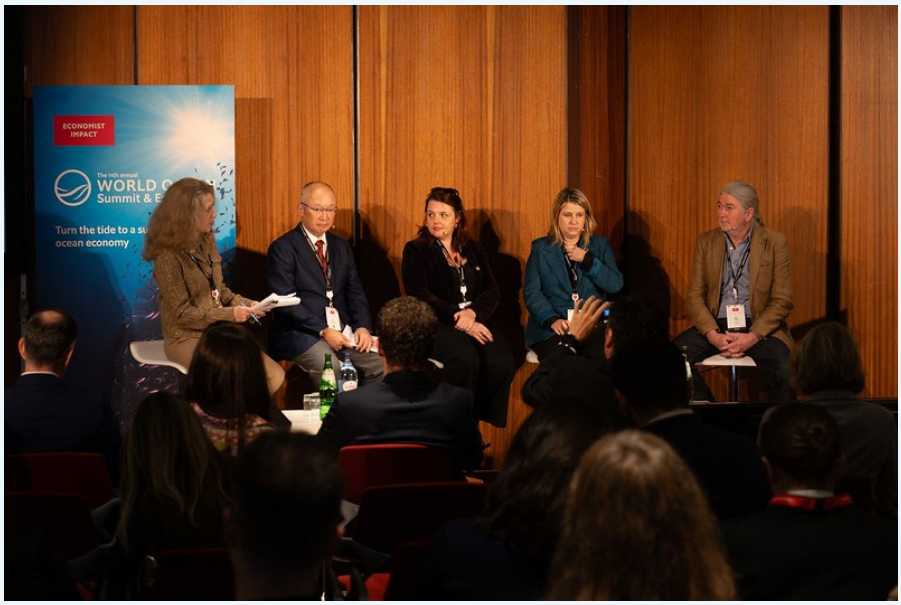
To protect biodiversity, numerous countries, including 77 in the Global Ocean Alliance led by Britain, have committed to conserve and manage 30% of the global ocean by 2030, using marine protected areas (MPAs) and other effective area-based conservation measures.

In a strategy session considering what makes for an effective MPA, Kathy Graham, Canada's director-general for marine planning and conservation, fisheries and oceans, told how since 2015, the country has leapt from protecting 1% of its oceans to nearly 15% today. Science, local knowledge and analysis of the costs of inaction have helped make the case for the increase.

Vera Coelho, deputy vice-president for Europe at Oceana, an international ocean-conservation organisation, contemplated the stern opposition in parts of Europe to curtailing activities in MPAs. When this comes from legally operating maritime businesses, particularly fishers, it could be overcome by supporting communities through a "just transition towards more sustainable methods". Bottom-trawling, she explained, is not only destructive but is low-margin and depletes fish stocks. "We could give them better livelihoods with more fish to catch if we protected these nursery and spawning areas," she said.

Pushback has hindered establishment of standards for minimum protection of MPAs across the European Union. Emanuel Gonçalves, chief scientist of the Oceano Azul Foundation, highlighted the importance of standards in engaging with stakeholders. Successful engagement has been important to managing the MPA of Cap d'Agde in France, whose director, Renard Dupuy, stressed the need for MPAs to be adequately resourced with a team, finances and headquarters. In Canada, community consultation helped establish what activities would be banned in MPAs, including oil and gas exploitation, bottom trawling and mining.

Pulling together for greener shipping



In a panel on green shipping, moderator Madadh MacLaine, secretary-general of the Zero Emissions Ship Technology Association, first asked speakers to remember that the imperative towards greener shipping affects Sustainable Development Goal 14: life below water.

Fifty years on from the signing of the International Convention for the Prevention of Pollution from Ships (MARPOL), John Maggs, president of the Clean Shipping Coalition, said his organisation has found that areas including noise and grey water are still problematic, while some "solutions", such as exhaust scrubbing for sulphur dioxide, have created new problems. Though many people treat green shipping as meaning simply decarbonised shipping, shipping has a far wider range of impacts on the ocean than those that come from greenhouse-gas (GHG) emissions.

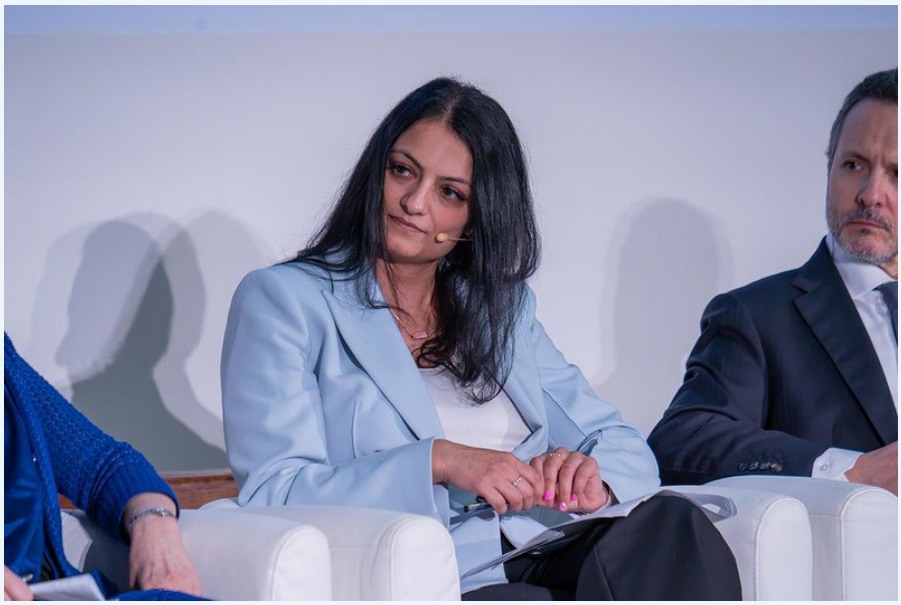
In adapting to greater demands for sustainability, ports need knowledge and investment to implement solutions including green fuels and electrification, said Isabel Moura Ramos, an executive board member at the Port of Lisbon. Ships themselves may have a clearer path to reducing pollution. Takeshi Hashimoto, chief executive of Mitsui O.S.K. Lines, suggested that more efficient ship designs, wind-assisted propulsion and alternative fuels could reduce emissions 40-50% in a short period, helping to hit 2030 targets.

Gyorgyi Gurban, head of project implementation in the department of partnerships and projects at the International Maritime Organisation (IMO), highlighted the OECD's assessment that says $90bn in investment is needed to achieve the IMO's 2023 strategy on reducing GHG emissions from ships. Developing countries can have difficulty getting finance. Ms Ramos emphasised the value of forums like the World Ocean Summit in bringing together stakeholders from outside of the conservative port ecosystem to share innovation and spark collaboration.

"We of course have to decarbonise shipping and it will be greener when it's decarbonised. But shipping, sadly, has all sorts of other rather unfortunate environmental impacts, especially on the oceans."

John Maggs
President
Clean Shipping Coalition

Meeting energy demands with offshore wind



The offshore wind industry has grown rapidly over the past decade, with around 64GW of generation capacity installed globally. That figure is far from the 380GW needed from offshore wind to meet targets set by international energy agencies, as Amisha Patel of the Global Wind Energy Council told the audience in a panel discussion. To build momentum, the industry can take best practices from developed markets to newer ones, but there is a need for infrastructure and supply-chain development, along with political will and regulation.

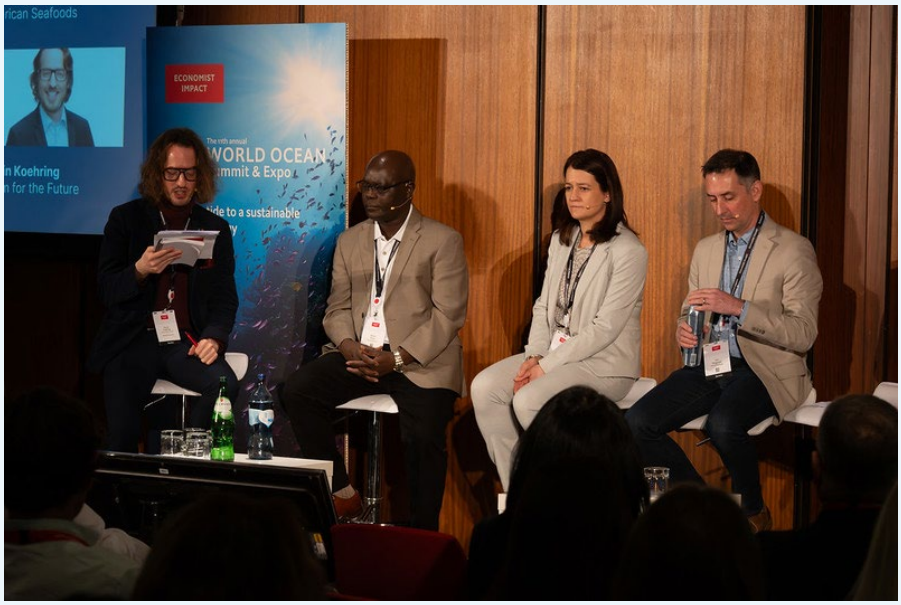
Despite a change of government to a centre-right coalition at Portugal's 2024 election, Carlos Costa Pina, a partner at SRS Legal, said that political will remains, amid a broad consensus on the importance of decarbonising the economy. Portugal's ongoing commitment to offshore wind is shown by the reservation of 10GW of grid capacity to connect new projects.

Technical advances are helping the deployment of offshore wind, said Francesco Cacciabue, a partner and the chief financial officer at Glennmont Partners. Increased turbine sizes enhance efficiency and output, while innovations such as floating turbines, installations connected simultaneously to the grids of multiple countries, and the use of wind power to produce hydrogen to fuel hard-to-abate industries, suggest further possibilities for the field.

"There is a consensus in the political spectrum in Portugal, and also in the Portuguese society, about the importance of decarbonising the economy and about the importance of renewable energy—sometimes for different reasons, because renewable energy generation serves different purposes."

Carlos Costa Pina
Partner
SRS Legal

How can blue foods contribute to healthy, equitable and sustainable food systems?



"Protein from blue foods…is easily accessed by rural people. … In my country we have youth unemployment up to 15%, so some of these growing industries are also potential areas to create jobs."

Alfred Achar
Managing director
Bayrise Fish Farm

Blue foods, encompassing all edible aquatic animals, plants and algae, are expected to play a critical role in sustainable food systems. As well as solving environmental and nutritional challenges, they can also address social issues, as speakers in a panel discussion illustrated.

Catarina Martins, the chief sustainability officer at Mowi, which is the world's largest producer of sustainable farm-raised seafood, spoke of her firm's application of internal and globally recognised sustainability standards across the many countries it operates in. After 60 years in business, it is also taking advantage of "moonshot projects" from newer organisations such as Google X, which it has been working with on underwater cameras to gather biometric data from salmon.

Alfred Achar, the managing director of Bayrise Fish Farm, which raises tilapia in Africa's Lake Victoria, endorsed blue foods as an accessible protein source for rural people, and hoped to make their production more sustainable for small-scale farmers. Better fish genetics, cheaper locally-produced feeds, capacity-building in the industry, better access to finance and a multi-stakeholder approach to policymaking would all help, he said.

In the waters of Alaska and the West Coast of the United States, the industry takes a modest 10-15% of the fish population out of the water each year, leaving the rest to reproduce and feed other parts of the ecosystem, as Tim Fitzgerald, chief sustainability officer of American Seafoods, explained. Social sustainability is also a central concern for the company; it creates fair conditions for its crew of more than 1,500 from around 50 countries through measures including paying a living wage and retention bonuses and offering health care and on-board internet.

Assessing deep-sea mining

One of the summit's most impassioned sessions was on the fractious issue of deep-sea mining (DSM), the advent of which has been set back due to the International Seabed Authority's decision to extend the time it will take to finalise rules until 2025. Maria Varteressian, Norway's state secretary for foreign affairs, discussed her country's plan for a "stepwise" approach to opening applications for DSM licences. The process will first ask whether DSM can be done sustainably. If the answer is no, all applications will be rejected.

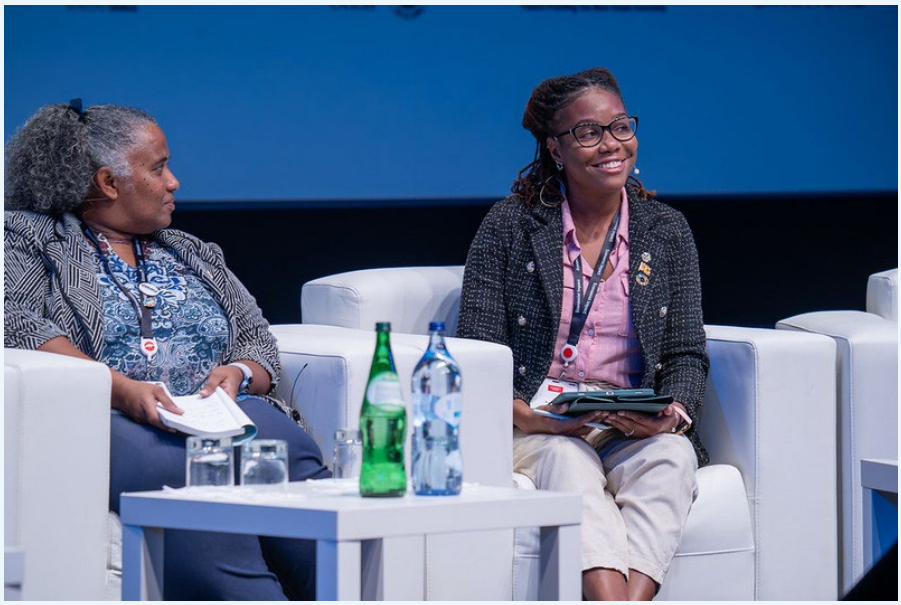
Erica Ocampo, chief sustainability officer at The Metals Company, a Canadian firm involved in DSM exploration, noted the possibilities for extracting rare-earth metals from polymetallic nodules on the seabed, rather than by land-based mining, which can cause harms such as deforestation. She urged listeners to consider DSM as a practical necessity rather than a black-and-white moral issue.

But comments from the audience were adamantly against DSM. Mina Epps, the ocean director at the International Union for the Conservation of Nature, and Monica Verbeek, executive director of Seas at Risk, also took a hard line against DSM, presenting it as an inevitable environmental disaster that has roused significant protest, particularly among young people. In questioning the argument that DSM is needed to supply materials for the energy transition, Ms Verbeek pointed to analysis showing the potential for a 58% reduction in demand for these minerals by 2050, along with the possibility to make electronic waste 90% recyclable, up from 10% today.

"We need to decouple growth in economies from growth in pollution and environmental degradation. That's really, really challenging and there are hard choices to be made."

Maria Varteressian
State secretary, ministry of foreign affairs
Norway

Driving ocean-centred solutions by islanders for small island developing states



The triple planetary crisis can have a disproportionate impact on small island developing states (SIDS), and calls for locally implementable solutions to ocean challenges. As its executive director, Mitsuyuki Unno, explained, The Nippon Foundation supports practical strategies through initiatives including the Closing the Circle programme conducted through the World Maritime University's WMU-Sasakawa Global Ocean Institute.

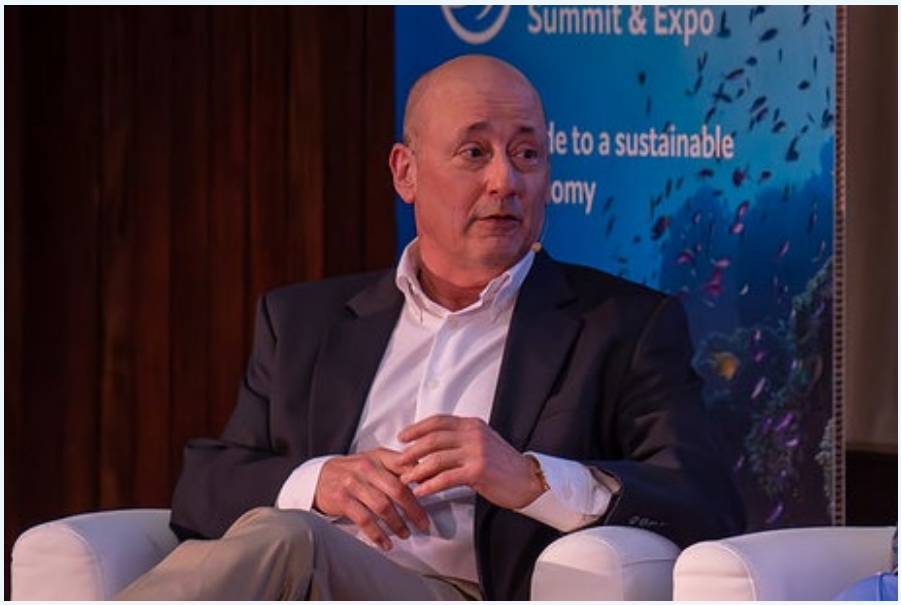
Roxanne Graham and Tricia Lovell, both alumni of the programme, participated in a strategy session on ocean-centred solutions by discussing their open-access research. Ms Graham highlighted the way locals in the Windward Islands are using debris, including tires and plastic bags full of sand, to create barriers against rising seas and protect against coastal erosion and flooding. Ms Lovell explored governance challenges surrounding abandoned fishing gear in small-scale fisheries, and advocated for an integrated approach that unites fisheries management and waste management. Susanna Debeauville-Scott, a project manager at the Organisation of Eastern Caribbean States, affirmed the need for this kind of research driven by the needs of island states.

Throughout the panel, speakers called for greater co-operation among governments, nongovernmental organisations and academia to address SIDS' environmental challenges. Walter Roban, the deputy premier of Bermuda, described how the country's government is working with the century-old Bermuda Institute of Ocean Sciences on solutions to pollution, the Waitt Foundation on the Bermuda Ocean Prosperity Programme, the Rocky Mountain Institute on decarbonising transport, and a company called Seabased on electricity generation from wave power. "Partnerships are crucial for us to develop all these strategies to benefit our environment and our long-term sustainable future," he said.

"We have developed a research agenda for the blue economy, which identifies our priorities as a region—the information that we need. … We can share this with academia, and academia can be guided and really ensure that the needs of the region are met."

Susanna Debeauville-Scott
Project manager
Organisation of Eastern Caribbean States

How to prove or disprove marine carbon dioxide removal (mCDR)



"Ocean-based carbon removal is one way to answer the question, 'How are we going to get billions of tonnes of carbon out of the atmosphere and put it somewhere safely?'"

Brad Ack
Chief executive
Ocean Visions

With the Intergovernmental Panel on Climate Change making it clear that carbon dioxide removal (CDR) will be needed to achieve climate targets, a strategy session asked how to gauge the effects of CDR on ocean health and the climate.

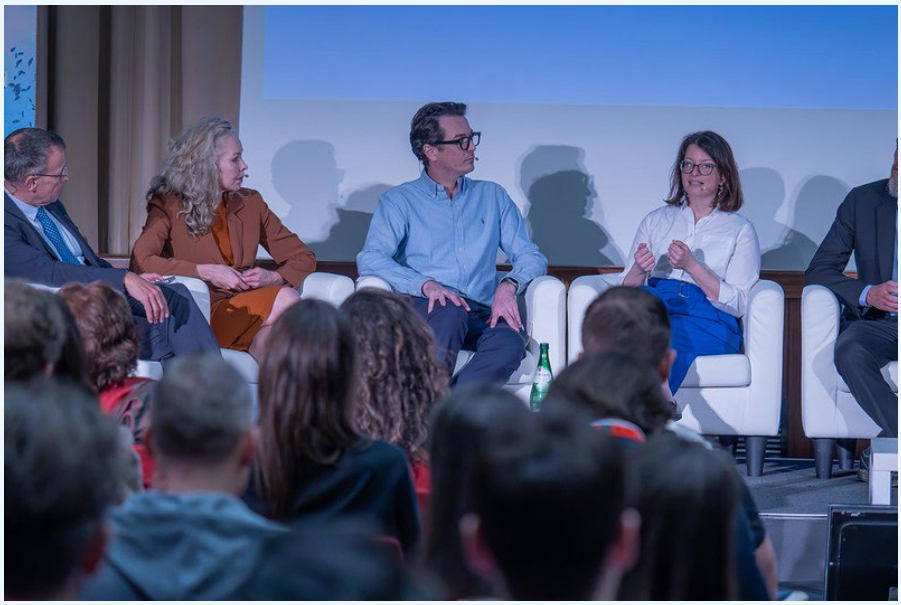
Brad Ack, chief executive of Ocean Visions, outlined five domains where his organisation is examining marine CDR (mCDR): macroalgae (seaweed), microalgae, direct ocean capture using electricity, ocean alkalinity enhancement and marine blue-carbon ecosystems. Which method will work best?

The Commonwealth Scientific and Industrial Research Organisation (CSIRO), an Australian government research agency, is also looking at multiple CDR approaches. Brett Molony, the CSIRO's science director for environment, said the aim is to store CO2 for at least hundreds of years. Brines produced in direct ocean capture could be piped deep undersea to remain under pressure for millennia, or stored in empty offshore oil and gas wells.

Chris Vivian, the co-chair of working group 41 of the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP), explored how international agreements such as the London Convention and Protocol on marine dumping had regulated experiments with seaweed, and noted likely discomfort with fertilising around 25% of the ocean to encourage microalgae at the scale needed to make a significant impact on CO2.

Entrepreneurs have an appetite for the financial risks in mCDR. Julie Pullen, a partner and the chief scientist at Propeller, which provides pre-seed and seed funding for ocean-climate solutions, cited Pitchbook coverage suggesting carbon management and technology is the climate-tech field with the highest potential returns.

Investing in nature



An investment hub session saw industry experts discussing the transformative potential of "nature tech" in addressing ocean degradation. Julie Pullen of Propeller expressed her excitement about technologies and techniques including environmental DNA, acoustics, sensors and remotely operated and autonomous vehicles, to quantify and protect biodiversity.

The tricky thing with "cool tech" is making something marketable and finding customers, said Alissa Peterson, a co-founder of SeaAhead, an open-innovation ecosystem for the blue economy. "The fish aren't going to pay," so solutions benefiting the ocean must find other use cases and needs to fulfil, to fund their implementation.

Venture capitalists and entrepreneurs on the panel, including Jahed Momand of Cerulean Ventures, Tyler Gwinn of Trousdale Ventures, Peter Rive, a co-founder of SolarCity, and Ross Brooks of Katapult Ocean, shared their strategies for turning nature tech into viable and even lucrative businesses. These included controlling as much of the value chain as possible in a "platform" approach, supporting innovation prizes to discover new products, focusing on repeated short-term revenue doublings rather than far-off or seemingly impossible goals, and investing in natural capital infrastructure at an early stage.

"One of the trickiest things that a technical founder needs to do is to translate what is cool about what they're doing into what someone wants to buy."

Alissa Peterson
Co-founder and executive director
SeaAhead

Key takeaways

Discussions on ocean health bring together multiple facets of today's "triple planetary crisis". Speakers at the summit endorsed the United Nations' recognition that climate change, pollution and biodiversity loss are linked. Their intersection in marine environments underscores the urgent need for strategies that address all three, particularly through the blue economy.

Interventions in ocean health should have a solid scientific basis. Discussions on multiple topics highlighted the need for evidence and analysis to underpin solutions, policy and advocacy. Governments and intergovernmental organisations can collaborate with academia to set a research agenda that addresses local needs stemming from environmental issues.

Technology has a central role to play in marine conservation and environmental regeneration. It is particularly valuable in gathering information to map ocean environments, document biodiversity, and inform policy and enforcement. Methods of marine CO2 removal and storage could also be decisive in halting anthropogenic climate change.

Marine protected areas are a crucial tool for safeguarding the ocean. MPAs were a recurring topic throughout the summit. Merely designating them is not enough. Efforts to manage MPAs must be adequately resourced, with blue bonds and social enterprise being among the ways to do so. Activity restrictions within them must also be communicated, enforced and if possible standardised.

The ocean needs investment to thrive. As one panellist noted, "the fish aren't going to pay" for solutions to issues of ocean health. Entrepreneurs are needed to develop business models that can make beneficial innovations pay, and to attract investors. Regulation that gives institutions a reason to invest not just with impact but for impact could open new possibilities for financing solutions.