



Briefing Report

Oceans & Water



Oceans & Water Report

This year, Innovation Zero is introducing new forums to its event, and we wanted to make sure we were fully informed on the latest trends and topics so we can deliver the best content possible to our audience.

We know that the oceans play an important role in regulating the Earth's temperature, absorbing carbon dioxide, and supporting biodiversity and livelihoods. But we are only just starting to recognise the extent to which the blue economy impacts climate change.

The [oceans have been left out of calls for a Green New Deal](#) but must be at the centre of the fight against climate change.

Key Statistics:

- The world ocean encompasses over **70% of the surface area of the planet and 99% of its living space.**
- The temperature of the world's ocean surface has hit an all-time high since satellite records began, leading to marine heatwaves around the globe, according to US government data. In July 2023, UN Secretary General Antonio Guterres warned, "The era of global warming has ended; **the era of global boiling has arrived.**"
- The High Level Panel for a Sustainable Ocean Economy estimates that the **ocean economy can deliver 21% of the greenhouse gas emission reductions** needed to meet the Paris Agreement target of limiting average global temperature rise to 1.5°C by 2050.

Who have we been speaking to?

- Caty Batten, Co-Founder & Director, Intaconnected
- Elena Doms, Head, Earth+
- Sir David King, Chair, Climate Crisis Advisory Group and Founder, Centre for Climate Repair
- Nick Wise, CEO, OceanMind
- Belinda Bramley, Oceans Solutions Consultant

What have we learned?

Speaking to our advisors, attending events and researching online has revealed to us how deep and expansive the conversations around net zero are in oceans & water; how promising the innovations are, and what an opportunity Innovation Zero has as a platform to catalyse tangible results by bringing the relevant stakeholders together. Here are some of the conversations we discovered...

The Blue Economy

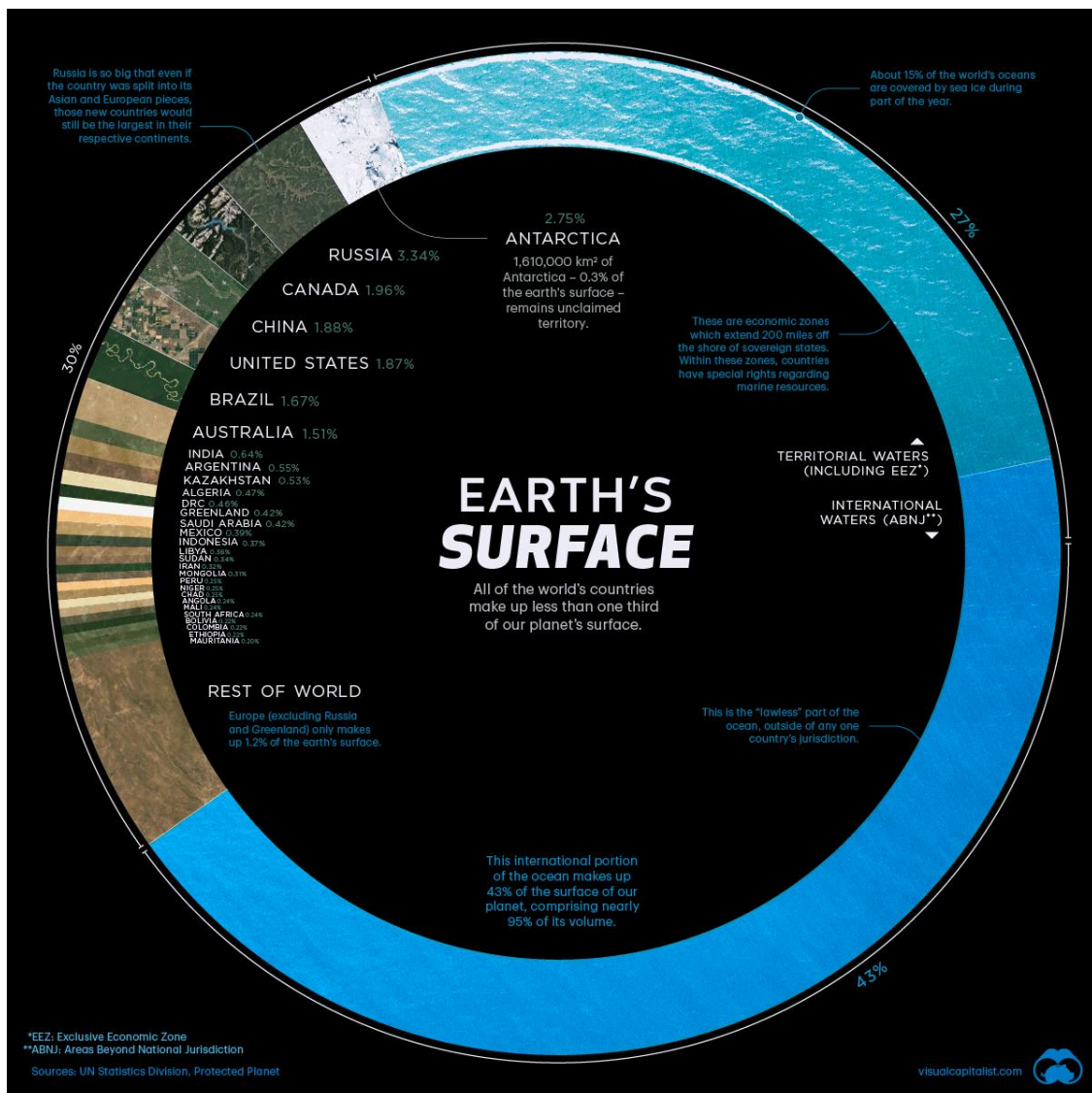
The blue economy is estimated to be worth more than [US\\$1.5 trillion per year](#) globally. It provides over 30 million jobs and supplies a vital source of protein to over three billion people. While it has been eclipsed in recent years by a greater focus on the 'green economy', a renewed interest in the blue economy is indicated by the OECD prediction that the ocean economy may double in size to [\\$3 trillion by 2030](#).

- **What is the Blue Economy?**

The World Bank defines the blue economy as the “sustainable use of ocean resources to benefit economies, livelihoods and ocean ecosystem health” and encompasses coastal ecotourism, sustainable fishing practices, and nature restoration and regeneration (mangroves, reefs, seagrass and tidal marshes). Countries such as [Kenya](#), [Gambia](#), [Samoa](#) and [Tunisia](#) are incorporating the Blue Economy into their development strategies.

At Innovation Zero, we want to make these economic opportunities known to investors and corporates worldwide, and arm communicators and influencers with the tools to spread this message far and wide. How can we generate wealth in the sustainable blue economy by scaling innovation and local economies in turn, while ensuring continued stewardship of ocean life?

As an island nation, the UK can position itself at the helm and demonstrate true leadership in this space, while honouring its COP27 commitments as a Global North economy to support the Global South.



Source: We live on a blue planet

Nature-Based Solutions

A key component of the functioning and growth of the blue economy is the role of Nature-Based Solutions (NBS). Following the agreement of the [2023 UN High Seas Treaty](#) to protect marine biodiversity in international waters, the role of nature-based solutions in contributing to climate mitigation and adaptation is gaining attention. There is now increasing investment by governments and companies in nature-based solutions to climate change provided by the oceans. These include carbon sequestration, coastal protection, biodiversity conservation and waste management.

It is important that we take a more holistic approach to ocean solutions as we move forward, and shift away from a solely engineered-based approach.

However, we must do so with a deft touch. In September 2023, for example, more than [200 scientists signed a letter pushing for “responsible” research](#) into ways to trap planet-heating carbon dioxide in the world’s oceans, wanting to ensure they don’t trigger any new problems by over-relying on oceans to help in the fight. As the letter states, “While ocean-based carbon dioxide removal approaches have enormous potential, there are also risks ... Society does not yet have nearly enough information about the effectiveness or impacts of any specific approach and so cannot make informed decisions about their use at scale.”

The pivotal function of ocean nature-based solutions for our planet and our economy is now being recognised by the carbon credit market, with [blue carbon offsetting projects](#) ramping up dramatically in scope, and [Blue Carbon Credits](#) being issued and traded at an exponential rate in turn. This is something *Innovation Zero* seeks to feature in its “Environmental Markets” forum as it dives into the future of nature-based versus engineered offsetting projects.

Identifying Problem Industries

Our Oceans & Water forum is unique. Unlike other forums, which are focused on high greenhouse gas-emitting sectors (Transport, Aviation & Shipping, Energy, Food & Agriculture), this forum represents an ecosystem jeopardised by climate change. Of course, it’s necessary to identify a problem before you work to find a solution, and thus we must do so here.

In a sense, an ecosystem like the ocean is sector agnostic; the greenhouse gas emissions which cause its temperatures to rise come from human activity in toto, and arguably only falls victim to each industry at the percentage at which they contribute to these emissions. That being said, there are certain specific areas which cause unique damage aside from rising temperatures, and it’s important these be highlighted and addressed.

For example, fast-moving consumer goods – or FMCGs – which comprise packaged foods, beverages, toiletries and other consumables, are filling our oceans with plastic. These tangle and choke marine wildlife and create monstrous bergs of litter and debris – most infamously the [Great Pacific Garbage Patch](#), a vortex of trash rotating around an area of 20 million square kilometres between California and Japan. As these plastics break up over hundreds and thousands of years into microplastics, they gradually [acidify our waters](#). The problem of plastic packaging desperately needs solutions.



Source: [The Ocean Cleanup](#)

Thankfully, there are amazing solutions on the horizon, and investment is building up rapidly. For example, Boyan Slat's [The Ocean Cleanup](#), funded in part by [Airbnb founder Joe Gebbia](#), is specifically focused on developing and scaling technologies to rid the oceans of plastic. Elsewhere, plastic is being taken out of packaging and being replaced with safe, biodegradable materials like seaweed – such as with [2022 Earthshot Prize winners Notpla](#). Innovation Zero aims to demonstrate the problem of plastics and microplastics, as well as the solutions paving the way for a cleaner ocean.

A second example of an industry ruining our ecosystem is the fashion industry. We know the fashion industry causes 10% of annual global carbon emissions – **more than all maritime shipping and international flights combined**. But the amount of water used in clothing production is real hidden villain of the story.

The [disappearance of the Aral sea in Kazakhstan](#) is one of the biggest environmental disasters linked to the garment industry. What was once home to thousands of fish and wildlife is now a vast desert. The reason for its disappearance is simple: rivers that once ran into the sea were diverted, primarily to keep cotton fields supplied with water. And it's impacted everything from the weather (harsher summers and winters) to the health of the local community. **An area of water the size of Ireland has disappeared in the space of 40 years.**

The industry is turning a corner, however, with big name brands like [Patagonia radically reducing its carbon footprint](#), and innovators like Spiber – [featured in our October edition of Zero In](#) – partnering with the likes of Pagaia and Goldwin and using biotechnology to produce material which requires less water.

We therefore will be featuring a case study on fashion, highlighting sustainable fashion brands, and what these brands are doing to reduce the use of water in their industry.

Repairing a Broken Water Cycle

Fashion uses a shocking amount of water, but isn't the only culprit, and it's almost no wonder why our riverbeds run dry. Here's how much water it takes to produce the following products:

- 1,800 gallons to produce the cotton in a pair of jeans
- 400 gallons to produce a cotton shirt
- 39,000 gallons to produce the average domestic automobile
- 150 gallons for the average-size Sunday newspaper
- 105 gallons per mined carat of diamond

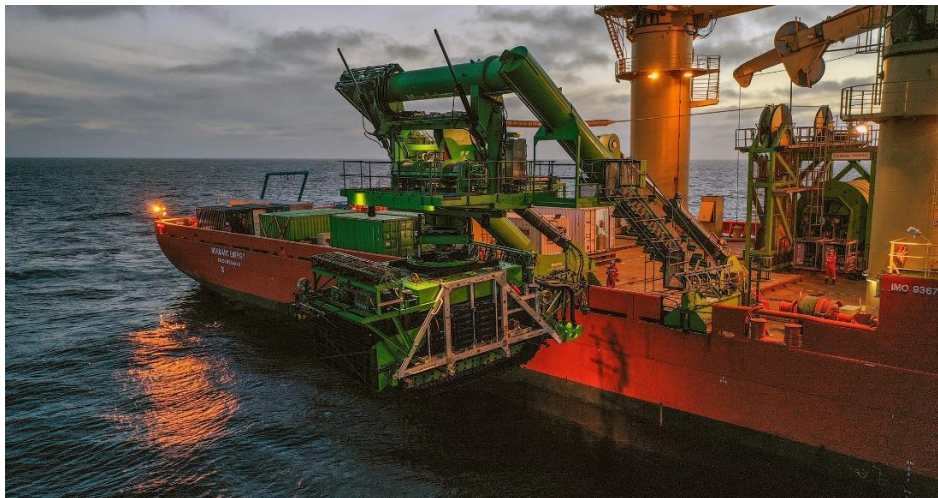
We also treat our land extremely poorly, particularly when it comes to the soil health of our farmlands, meaning rain isn't adequately soaked into the ground whenever there's a deluge, and flooding can occur. Moreover, the management of water resources is problematic at best, and we have to prepare for a world where drought is an ever-increasing norm. An extremely dry summer last year led to the return of increasingly familiar hosepipe bans. Less familiar, and far more shocking, was the sight of wildfires in England and Wales – [as far north as Yorkshire](#). We've come to expect them in California and Australia – in recent years, we've learned to accept them in Southern Europe – but now, [wildfires in Canada](#) are an occurrence we may have to get used to.

Innovation Zero seeks to bring both the agriculture and utilities industry to the table by addressing how we rehabilitate the water cycle, through the proper management of water resources and consumption, building resilience into our landscapes, and promoting regenerative practices to prevent unsustainable abstraction.

The Deep-Sea Mining Debate

Deep-sea mining is dominating the news cycle, with stories coming out almost on a near-daily basis about the need to tap our seabed for its mineral resources – or the need not to. Some governments want to plough ahead, with or without regulation, while environmental scientists implore against it. For instance, The Norwegian government proposed in June 2023 opening up a large area in the Arctic for deep sea mining between Greenland and Norway, claiming this can be done with “[acceptable degree of environmental impact](#)”, and Canadian firm The Metals Company is aiming to start production in the Pacific as early as 2025 despite an international meeting [failing to grant permission](#).

Britain is among 14 countries [sponsoring exploration or research contracts](#) – other nations such as [Ireland and Sweden](#) join a growing cohort opposed. Among this group are France, whose state secretary for the sea explained, “if we want to protect the environment and tackle climate change, we need to make sure that we protect the ocean, and to protect the ocean [we need to protect against deep-sea mining](#).”



[Source: MIT News](#)

This is an extremely contentious topic. It seems we do not have the resources to support green movements such as the [EV revolution](#), and yet the [environmental impact of deep-sea mining would be devastating](#). After much internal discussion, Innovation Zero has decided it does not see itself as the appropriate platform for a for-and-against debate, but this report encourages people to learn more about this issue. This is a monumental conversation amongst industry giants, governments, and international organisations, happening as we speak. It could determine the future of our planet, and most of us aren't aware it's happening.

Conclusions

Our oceans, rivers, seas and lakes are hugely misunderstood. As Zero In contributor Belinda Bramley wrote, the ocean is “[our greatest climate ally hiding in plain sight](#)”. It can provide **37% of the climate mitigation needed by 2030**, and bring billions to our economies in turn. The problems which blight it, and the solutions which lie in wait, just need platforming. Communicators and influencers need arming with the tools to bring this message effectively to consumers and policymakers alike. Investors need to understand the opportunities which lie at their fingertips. All of this is achievable – but it needs to happen now.



Meanwhile, the threat climate change poses to water security could potentially be the greatest threat of all. It is our water security upon which all human security rests, including our food, health, and even national security, where drought-induced diasporas and imperilled supply chains could utterly transform the world we know today.

Following the sage advice of our team of experts, and the research we conducted, we have developed a programme we hope you will find stimulating, provocative and meaningful, with sessions including but not limited to:

- Investing in Nature-Based Solutions
- Communicating Conservationism
- Wealth Generation in the Sustainable Blue Economy
- Tackling Drought and Rehabilitating the Water Cycle
- Cleaning and Restoring our Waters
- Fashion Industry Case Study

We hope to bring people together, break down siloes, drive the conversations forward, and ultimately resolve the key challenges raised here, thus pushing the needle towards net zero even further. We look forward to seeing you there.