

A large iceberg floats on the surface of the ocean under a cloudy sky. The water is split horizontally, with the top half showing the surface and the bottom half showing the submerged, much larger part of the iceberg. The text is overlaid on the submerged portion.

Seas of Opportunity

A Guide to the Blue Economy

a collaboration between

**MARINE
CONSERVATION
SOCIETY**

and

**+simmons
simmons**

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Foreword

The ocean forms the basis for both our economic and human existence. Its manifold contribution is varied as it is vital from supporting over 80 percent of global trade to serving as the lungs of the planet by generating 50 per cent of the world's oxygen, and absorbing over 25 of human-caused carbon dioxide. Yet, these critical 'ecosystem services' provided by the Ocean remain unacknowledged by the current economic models that govern our world.

It is imperative that we change this narrative to one that values the ocean's vast physical, chemical and biological functions that keep our Earth habitable and our economies prosperous. We need an economic model that is fit for a blue planet. This is what we mean by a 'sustainable blue economy'.

The way our current economy works will not sustain itself for much longer. Growth is fuelled by the depletion of natural ecosystems upon which we depend. According to the [Bank of England](#), an economy is a "system for distributing scarce resources." As nature's ecosystems decline, the scarcity of these resources will increase.

However, another future is possible. If we work to support the marine ecosystems that sustain us, we can increase the abundance of gifts that the ocean provides to us. This is a two-way relationship: **if we look after the ocean it will continue to look after us.**

The solution is simple: place these fragile ecosystems at the centre of our economy and nurture them. This will ensure that they can provide more of these benefits both in the short term and into the future. To do so, we need to create the conditions for ocean ecosystems to continue to thrive. This means addressing threats to ocean health and focusing on restoration. It

also means applying a regenerative and sustainable approach to economic activities that benefit from the ocean. The aim is to enable opportunities that can support economic growth and prosperity through more sustainable means. The insights shared in this series highlight that there does not have to be a compromise between economic and ecological health. The latter supports the former.

Our series of expert insights was aptly named [Seas Of Opportunity](#). What shines through across the series is the diversity of inspiring efforts already underway to support a sustainable blue economy. These bring the promise of achieving social and economic development in alignment with planetary boundaries. As well as protecting financial and economic value at risk, there is a wealth of financial opportunity in a sustainable blue economy. National and local governments have the power to set the wheels in motion. The private sector can help to take it to the next level.

Those that act first stand to gain the most in a fast-evolving environment. So, we hope this series inspires you to be part of this sea change to turn these opportunities into reality through a sustainable blue economy. Our thanks to all the wonderful experts who contributed their insights to this series and to James Merchant from the Marine Conservation Society and Delphine Maillot from Simmons & Simmons for helping bring it all together.

Sandy Luk & Sonali Siriwardena

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Introduction

The Guide to The Blue Economy

In 2024, the [Marine Conservation Society](#) and [Simmons & Simmons](#) began collaborating on a podcast series named [Seas Of Opportunity: Navigating the Blue Economy](#). We welcomed a variety of distinguished experts to gather their perspectives on building a sustainable blue economy. Topics ranged from the physics of the ocean to the legal, financial and policy aspects that can shape the blue economy. Given the breadth of expertise shared across the series, we have collated the insights from each of these interviews into this *Guide To The Blue Economy*. We hope that this series of essays will illustrate the need to embed these different perspectives into our relationship with the ocean.

What is a sustainable blue economy?

The blue economy encompasses the many activities taking place in the coastal and marine space. These all have different degrees of impact on ocean health. In a sustainable blue economy, policy measures and financial flows are geared towards positive and regenerative activities. This creates an economy built around protecting marine ecosystems that support livelihoods and enhance our wellbeing.

At the centre of a sustainable blue economy is marine natural capital. Natural capital refers to the ecosystems and species that provide economic and social benefits. These many benefits include providing food and raw materials, regulating our climate, and supporting leisure and recreation opportunities. In simple terms, a sustainable approach ensures that these natural assets supporting our economy and wellbeing can keep doing so.

By integrating this thinking into policy and business practices, we can ensure that economic activity does not come at the expense of the resources that sustain it. Instead, a foundational principle of a sustainable blue economy is that marine ecosystems are sustained or growing.

Blue finance in the blue economy

Blue finance is an important tool for developing and shaping the sustainable blue economy. Public funding - government subsidies, grants and loans - can support and grow entire industries. In a sustainable blue economy, this is essential for scaling-up and de-risking projects to attract further investment. Many governments have the capacity to issue blue bonds which could raise financial capital to support this. Beyond public funding, the finance sector has the biggest influence in where money flows to in the economy. These decisions, applied through investments and an array of financial instruments, can dictate which activities or industries grow.

As a tool, it is important that blue finance is used and applied responsibly. There are some activities within the ocean that are not sustainable. It is therefore essential that appropriate standards and ecological advice are utilised to guide finance to the right places. Ultimately, it is in the interests of both governments and the private sector to use blue finance appropriately - to manage risks, protect value and to seize opportunities.

The economic case for a sustainable blue economy

Healthier seas and coastal ecosystems can increase food security, protect our coastlines and draw down vast amounts of carbon. Healthy seas will equip us with the ecological tools to deal with environmental shocks and adapt to change. This resilience extends to our economy and financial sector too.

The ocean underpins over half of the world's economic value, yet it is often overlooked in decision-making. In the 2024 UK and US elections, environmental protections were too often framed as a trade-off against economic progress.

We know that responsible stewardship of our natural resources is a solid foundation for long-term prosperity.

The sustainable blue economy offers the means to achieve economic, social and environmental progress *through ocean recovery*. This begins with local communities and extends throughout the economy and financial sectors.

----- Protecting value -----

Our economy, financial sector and the environment are inextricably linked. The entire GDP of the planet is dependent in some level on biodiversity, with over half of this Gross Domestic Product (GDP) estimated to be moderately or highly dependent on it. Most biodiversity is found within the ocean and concentrated in coastal waters. A leading study by WWF revealed that globally 66% of publicly listed companies have exposure and dependencies on ocean health. The study reported that, in a business-as-usual scenario, \$8.4 trillion USD of assets and revenues are at risk over a 15-year period.

Failure to protect marine ecosystems leaves massive economic and financial value at risk. The sustainable blue economy addresses this risk by working *with* the ecosystems that support this value and not at their expense. For island nations such as the UK, with vast marine territories, this cannot be ignored.

----- Creating value -----

As the sustainable blue economy grows, it will generate jobs, multigenerational livelihoods and economic growth. Entire new industries can be supported in the process, and these benefits will flow into coastal economies that have often been in decline for decades. Fostering a sustainable approach requires that the benefits of a blue economy are distributed fairly and equally, and that all stakeholders are involved in decisions. Equity in the sustainable blue economy would mean that local and coastal communities - stewards of the marine environment with the knowledge needed to look after it - are key architects and beneficiaries of the opportunities that it provides.



----- Case study: Coastal restoration -----

Considering all socioeconomic benefits, coastal restoration is shown to provide a tenfold return on investment.

An example of these returns includes jobs created through nature-based recovery – a largely untapped source of employment for coastal economies. Analysis of restoration programmes in the US revealed that 15 - 30 jobs were created for every \$1 million USD spent. This generated six times more jobs than the equivalent investment into oil and gas. Each job led to the creation of between 1.48 and 3.8 further jobs, one of the many knock-on benefits to local economies. This extended to increased property values, higher tax revenues and greater recreational spending. For example, \$10 million USD spent on wetland and shoreline restoration in Michigan was estimated to increase local property values by \$12 million USD, increase tax revenues by \$600,000 USD and boost recreational spending by \$1 million USD. Research by NOAA finds that the jobs created through funding across the US made a significant contribution to the economic growth and recovery of the nation’s economy and will have long-lasting benefits to local economies.

This is just one example of the opportunities presented by scaling up the sustainable blue economy. It is possible that entirely new industries could arise to take advantage of the benefits of a thriving marine environment.

----- Getting started -----

We all have a role to play. National and local governments must lay the foundations for a blue economy using ambitious policy and spending measures. The business and financial sectors should work to understand their impacts and risks linked to ocean health, as well as supporting ocean-positive activities and investments. Finally, it is our communities, particularly in coastal areas, that will have a decisive role in the protection and enhancement of our seas. Together this will fuel a more equitable and thriving sustainable blue economy.

A strong, stable, and sustainable economy is built on a healthy environment. If we manage our natural resources wisely today, we can secure a prosperous future for generations to come.

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1.



Navigating the Sustainable Blue Economy

Through our *Seas of Opportunity* podcast series, we explored key themes in ocean conservation, blue finance and the sustainable blue economy. This guide distils expert insights into a clear narrative for navigating the Blue Economy.

Navigating the Blue Economy

Across the Seas Of Opportunity Navigating The Blue Economy podcast, we conducted interviews with a variety of experts on ocean conservation, blue finance and the blue economy. The purpose was to explore the why, what and how of building a sustainable blue economy: spanning ocean science to blue finance mechanisms. Each interview has been distilled into an essay featuring quotes from our expert guests. This summary pieces together elements of each discussion into our narrative on navigating a sustainable blue economy.

Our Ocean shapes our planet

We live on a blue planet, where the ocean shapes all life on Earth. This begins with the physics of the ocean that makes the planet habitable. It is the ocean that allows a rock moving through inhospitable space to become a thriving oasis of life. Every day it absorbs the sun's energy and releases it at night to create a stable climate. This makes us entirely dependent on the ocean. In the words of **Dr Helen Czerski**, "*we're all living in its shadow and we're living within the environments it creates.*"

The physics, chemistry and biology of the ocean allow it to support life on Earth. Over time, we have lost sight of what a healthy ocean looks like. Instead, we have become accustomed to polluted waters with depleted biodiversity. The situation was captured poetically by **Emily Cunningham MBE**:

"If you think about biodiversity like the most incredible orchestra that you have ever listened to, what's been happening on our watch is that each instrument is slowly falling quiet over time so the quality of that music is getting less and less... and it will get to the point where there's just a few instruments that don't work well together anymore and can't function as an orchestra."



Nature has a remarkable ability to adapt and recover when given the chance. We can draw great inspiration from what our seas used to be like and pursue that vision for our future. This includes historical coastal ecosystems that supported abundant and diverse marine life, resilient coastlines and clean waters. **Dr Jean-Luc Solandt** reminded us that we used to have oyster beds the size of Wales in the North Sea, and thriving seagrass meadows along our coastlines.

To change course, we have a clear task summarised by **Minna Epps**: "*We know what we have to do - we have to remove the threats, build resilience and enhance the recovery to restore the ocean.*"

This urgent task finds an adversary in our current political and economic approach to the ocean: one that values the extraction and depletion of marine resources over its protection.

In a sustainable blue economy, ocean health would be maintained while providing social and economic progress. It would create resilience and adaptability in an uncertain future, extending to financial resilience and opportunity.

Rethinking our relationship to the ocean

Our current economic model is not sustainable if it depletes our marine environment and its capacity to support our economy and wellbeing. On this path, we will not be able to rely on the ocean's gifts long into the future. This boils down any complexities of economics or finance to simple common sense. Sustainability is not a nice-to-have, but a necessity for our economic security and societal well-being.

“The big challenge for our time is to stop fighting against our planet. We have to understand how this big engine is keeping everything going. We want to work with it, not against it. So, we need to understand what it's already doing and find ways to engineer our world so it works with those things rather than fighting against them.”

- Dr Helen Czerski

A sustainable blue economy allows ocean ecosystems to carry on supporting our livelihoods and wellbeing on land and at sea.

The first step is to stop damaging the oceanic species, habitats and functions that we rely on. The next is to restore them back to a suitable baseline.

As a society we do not deliberate spending on the necessities to keep life ticking over. This is no different. Once these foundations are in place, we can look at growing the social, economic and life-supporting benefits that the ocean is capable of gifting to us.

Enhancing our marine natural capital requires collaboration across different areas of society. The scientific community can help to understand and monitor the condition of ocean ecosystems over time; industry and financial sectors can look to understand their risks linked to ocean health and redirect funding towards regenerative activities; and communities will play a leading role as stewards of the marine environment. It is governments that can lay the foundations upon which this can play out.

A starting point is a clear policy and strategy for the blue economy. As **Belinda Bramley** explains, a clear and ambitious strategy can provide *“the mandate and direction of travel for research institutes, the private sector, NGOs and community groups to work with.”*

Where governments face challenges of capacity or expertise in the sustainable use of the seas, delegation is another option. We learned from **Nicolas Pascal** how the Blue Alliance is helping to conserve ocean areas while also delivering developmental and investment opportunities. This provides a clear case study of conservation and economic opportunities going hand in hand.

National governments can learn best practices from councils and communities already leading change at a local level. **Emily Cunningham MBE** has engaged with councils on Motion for the Ocean:

“It was a really good lesson that they are ready to help, they just didn't have the information or awareness beforehand. All of us, no matter where we live, can be that person who communicates an issue or a challenge where there might be action available, making sure your elected representative knows about it.”

We should not expect to get everything right straight away or to have all the answers. Where there is uncertainty, there are fundamental values that can guide our decisions. **Mere Takoko** shared Māori values that offer this guidance, including *kaitiakitanga*, an ethos of guardianship that can steer us away from an extractive approach to ocean life:

“It informs us that when we interact with the ocean we are interacting with kin. We are not resource managers. That's a completely foreign view to us. We live in kinship with the ocean.”

The role of blue finance

Blue finance is the electricity that powers the engine of the blue economy. This starts with government spending on capital maintenance – removing pressures and supporting restoration. In the process, public funding can kickstart sustainable activities and industries, creating jobs and livelihoods. In turn, this can present opportunities to the private finance sector. It is private finance that can then take the sustainable blue economy to new heights.

Mobilising finance for ocean health has proven a big challenge. To echo **Willem Visser**, “no one really disagrees with the value of clean water, but it feels sometimes easier to fund a Mars exploration than clean up the water on our own planet.” SDG 14 – Life Below Water – remains drastically underfunded and largely limited to philanthropic or donor funding. Several of our guests are leading the efforts to tap into the much larger pools of finance found in capital markets, including **Ted Janulis**:

“Those markets are very appealing because the equity and bond markets globally are \$100 trillion-plus markets. The venture market is \$200 billion-plus.”

This is a lot of money, but diverting some of it to the blue economy needs help. For those eager to invest in the blue economy, it is not always clear what qualifies as a suitable “blue” investment.

At the International Finance Corporation, **Dr Pushkala Ratan** identified that without proper guidelines, “issuers, borrowers [and] investors wouldn’t know what qualifies as blue and furthermore, might have different interpretations.” To navigate this obstacle, the International Finance Corporation has published [Guidelines For Blue Finance](#). These have helped to shape blue finance products and investments by packaging blue projects into products such as blue bonds.

Another challenge is finding eligible projects of sufficient number and size to invest in. Before we can talk about returns on investment, money is needed to generate financially viable projects that can attract further investment.

An important tool here is blended finance, which was a recurring theme across the series. This means combining different pools of finance to distribute the risk and boost the availability of investible projects.

We are in a changing and uncertain world. It makes financial sense to understand the risks and impacts linked to ocean health and to direct finance towards managing those risks. This demands a longer-term view. **Dr Sian Rees** highlights the advantage that financial institutions have in being able to look beyond government cycles to protect or grow the value of nature over time:

“They can be part of the solution rather than the problem, and they can have a much longer-term view than our current political systems because they’re thinking about investing for future generations. That’s how we describe a good ancestor.”

To deliver on this, progress made in the finance sector around climate and biodiversity must expand to include the ocean. After all, this is our planet’s thermoregulator where most of the Earth’s biodiversity is found. **Will Oulton** set out a clear message on this point:

“I don’t believe anybody can have a credible nature or biodiversity approach or policy without including some reference to the impact on the ocean. That might sound a bit harsh, but it’s true. Hopefully more and more institutions will begin to think in that way and expand beyond that terrestrial lens.”

The growth in blue finance will be borne out of both necessity and opportunity. In uncertain times, those industries, institutions and governments that show bravery in their actions are the ones that stand to gain the most and can lead the way.

“Investors big and small need to become less risk averse... we see investors take risky business in other areas but not when it comes to nature. I hope that we see much bigger initiatives, bigger players, doing the right move in the right direction but faster and with higher levels of commitment.”

- **Dorothee Herr**

Seas of Opportunity

A common thread across all the expert insights was that there is a wealth of opportunity in building a sustainable blue economy.

Blue finance will help to unlock these opportunities. Innovative products like debt-for-nature swaps, blue bonds and parametric insurance can make a huge difference in protecting local communities and ocean habitats from the growing threats of climate change.^{1,2,3} As **Sarah Conway** outlined, these initiatives can support governments in alleviating debts and improving their credit ratings, as demonstrated in Belize:

“The outcome of this particular debt conversion was pretty amazing.... It allowed S&P [Standard & Poor’s] to increase Belize’s sovereign credit rating by three steps from CC to B-. It also allowed that direct debt reduction and reduction of the cost of capital... It enabled Belize to commit pretty significant financial resources to marine conservation and provided comfort to the bond investors against post-disaster default of debt payments.”

Across the last decade, we have seen significant growth in green finance as it moved from the periphery into mainstream finance. **Dr Pushkala Ratan** explains that we could be on the cusp of even faster growth in blue finance as it capitalises on existing green finance mechanisms. This will take advantage of investment opportunities in the blue economy, beginning in emerging markets:

“The ocean economy is expected to be worth \$3 trillion [USD] by 2030 and employing about 40 million people. We recently commissioned a market research study and that indicated an immediate investment opportunity of about \$90 billion [USD] in the blue economy across selected emerging markets globally.”

The benefits of the blue economy extend beyond the ocean itself. As **Dorothee Herr** points out, ocean-based solutions can help us mitigate and adapt to climate change and deliver economic and development gains in the process. **Belinda Bramley** explains that the benefits of a sustainable approach are channelled through local, coastal communities that may have been in socioeconomic decline for decades:

“If the Government looks at the sustainable economic opportunities to be harnessed over time from our sea space, they should be able to see a wealth of opportunity for environmental and social regeneration in what have become neglected parts of the UK.”

Nicolas Pascal illustrated how marine regeneration can support local businesses to attract investment into coastal communities. As the sustainable blue economy grows, there are opportunities for financiers to capture a new segment of customers and investors looking to harness the benefits it can deliver.

“If we can find solutions [and] work through the challenges... it helps to capture a huge customer segment of untapped financing potential in the blue economy that several companies may not have considered. It opens them up to a wider investor base and a value-added offering. The blue economy is so interlinked with health, jobs and livelihoods, in addition to climate change, that I think it appeals to a wider set of investors and issuers.”

- Dr Pushkala Ratan

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1. [Parametric insurance](#) delivers payouts in the event of pre-agreed and measurable trigger events, such as a rainfall or wind speeds.
 2. [Blue bonds](#) are debt-instruments that channel finance into the blue economy. A buyer of bonds essentially lends to the issuer (such as a government or development bank), providing them with available funds to spend in the short term on sustainable ocean activities and to be repaid with interest in the future.
 3. [Debt-for-nature swaps](#) are financial agreements where some of a nation’s foreign debt is paid off at a reduced rate in exchange for commitments towards environmental conservation.

Healthy ecosystems can even become a significant source of national wealth, offering what **Ralph Chami** describes as a “win-win-win” for nature, communities and investors. This opportunity lies in the development of natural capital markets. Pricing nature’s benefits in financial markets can create sources of national wealth for countries such as the Bahamas, home to the world’s largest area of seagrass. The value of carbon sequestration by the seagrass alone is potentially worth \$150-170 billion USD if priced in the markets. These natural benefits are also going to become increasingly sought after as our economies start to reckon with the growing threats of climate change. According to Ralph, this translates into a smart investment for buyers of these services:

“My colleagues on the demand side are basically investing in an asset whose price is only going to increase because climate change is not subject to business cycles. The demand for the technology to fight climate change is only going to increase in the eleventh hour.”

The financial and economic opportunities are there. However, this should not overshadow the greater benefit of a sustainable blue economy: to safeguard a prosperous future across generations. As we move into a changing world, this approach can provide resilience and opportunity where our current system will only falter. The urgency to address the triple threat of climate change, biodiversity loss and pollution will only increase over time. The sustainable blue economy offers the means to mitigate and adapt to these proactively, by harnessing the gifts that the ocean provides and ensuring it can keep doing so.

In the process, this can deliver equitable development and wellbeing across societies. A lot needs to be done to get there, but the challenges are not insurmountable.

Once we scale them, there are seas of opportunity to be explored.



2.



Science & Conservation Living on an Ocean Planet

These interviews explored our dependence on ocean health and some of the ways in which we can start conserving this marine life-support system by embedding it into our decision making.

The Ocean Engine that Powers our Planet

To many people, the ocean is out of sight and out of mind. However, it is the ocean that makes life possible on Planet Earth. Understanding how the ocean shapes life on our planet is essential to preserving it.

In episode 5, we were joined by physicist, oceanographer and BBC presenter Dr Helen Czerski to learn about the physics of the ocean and how this drives life on our planet.

Our Ocean shapes our planet

We know that the ocean is fundamental to life on Earth, but it's not just the species and ecosystems in the ocean that we depend on. The physics of the ocean is crucial to powering life in the ocean and on land. This is what Helen refers to as the ocean engine.

"We talk about us being dependent on it quite a lot, but we don't ever talk about why. And the reason it matters is that the ocean is not just blue filler with fish in it, which is how it's normally presented. It is a 3-dimensional engine... and the way this engine turns is not only what sets the context for Planet Earth, but it also affects the things that move around on Earth. It's the way it turns and the way it moves that allows life to exist in some places and not others."

The influence of the ocean engine extends far beyond the ocean alone. The functioning of this ocean engine ensures that all of Planet Earth itself remains habitable.

"The ocean is the big buffer. It's the big energy buffer, so that we can go overnight when we're facing away into space, away from the sun, and we've still got enough heat to keep warm. And equally, when we're facing the other way, we don't overheat. The water is absorbing energy. So, it's smoothing out the peaks and troughs in energy that are coming from the sun. And so, once you've got a big engine like that, we're all living in its shadow and we're living within the environments it creates."



Changing our attitude to the ocean

As well as making the planet habitable in the first place, the ocean has been a huge ally in mitigating the effects of man-made climate change. The ocean stores over 90% of the additional heat energy trapped on Earth due to our greenhouse gas emissions (therefore keeping that heat further away from our everyday lives). It also absorbs a hefty chunk of our carbon dioxide emissions that would otherwise stay in the atmosphere.

Without this, we would already be well beyond the Paris climate targets and the world would already look very different. However, absorbing these changes is not without consequence for the ocean and how the ocean engine functions.

In discussing what we need to do to ensure that the ocean can continue to support life on Earth, Helen stresses the need for a broader change in attitudes towards our ocean. Understanding in depth how our ocean works can help us to improve our relationship with it.

The Ocean Engine that Powers our Planet

“The biggest thing we have to realise is that the ocean is already doing something. So, if you put something in the ocean or take something from it, it's not a neutral act.... The biggest thing is that change in attitude. You have to ask the question: what was the thing of value that the ocean was already doing in that space?”

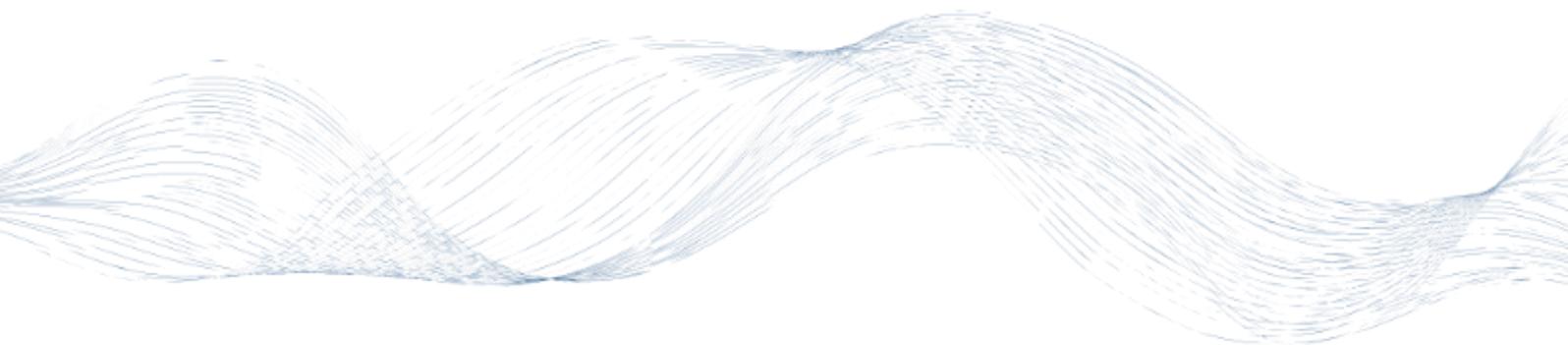
The ocean is not out of sight and out of mind, nor can we make changes to it without consequence. It is this change of attitude that could define our future. By respecting the processes that support life on Earth, we can start to consider how to live within these planetary systems and not at their expense.

The big challenge for our time is to stop fighting against our planet. We have to understand how this big engine is keeping everything going. We want to work with it, not against it. So, we need to understand what it's already doing and find ways to engineer our world so it works with those things rather than fighting against them.... So it's less about specific types of things and more about how we think about the things that we do.”

Doing the right thing

Considering reasons for optimism and areas of progress, Helen reflects on how much public awareness and interest in talking about the ocean has risen over the past decade along with a deeper understanding of the complexity of the marine environment. This has been accompanied with a shift in attitude, particularly from companies wanting to understand how to manage their own impacts. The challenge now is how to quantify and acknowledge positive efforts that are being made to support ocean health.

“The only problem is that we haven't found a way of quantifying it. So, at the moment a company can do a good thing... but we don't really have a way to measure that. We don't really have the way to say thank you.... I think people are trying, but we need to find better ways to recognise when companies - especially companies - do the right thing”



Understanding Marine Natural Capital

One way to better incorporate natural ecosystems into our decision-making is through the natural capital approach. A recurring theme throughout the podcast series is that marine natural capital is fundamental to a sustainable blue economy. In our interview with Dr Sian Rees, we dive deeper into understanding what marine natural capital is.

Sian Rees is a marine scientist specialising in marine conservation, marine management and policy. Sian has authored key research on marine natural capital, looking at securing the benefits it provides and how it informs decision making. She has also been part of Defra's Marine Natural Capital Ecosystem Assessment Advisory Group.

What is marine natural capital?

Sian explains that the term *capital* describes something we value. We often think of value as monetary, but our fundamental needs are for food, water, clean air and wellbeing. These benefits are provided by nature - by our natural capital.

Marine natural capital is simply *"those parts of nature that exist below the waves"*. A clear example of marine natural capital is a coral reef. Research highlights many valuable benefits that coral reefs provide, such as reducing the impact of waves hitting our shores, supporting recreational diving and tourism opportunities, or providing a habitat for fish which in turn supports food provision. To date, the value of marine ecosystems has not been accounted for, and they have become degraded. To address this decline, the marine natural capital approach is a way to represent that value in decision making.

"It's been ignored and used up and we find ourselves in a situation today where levels of biodiversity are very much reduced and what we're doing is we're placing at risk all of those benefits that we receive from nature. So, to bring nature and marine ecosystems in particular into the foreground of all decision making, the term natural capital has been coined. This is really to ensure that nature becomes something that we value, so it's really front and centre like all the other types of capital. The aim is essentially to protect it and to grow it."



How do we apply the marine natural capital approach?

Key to the natural capital approach is to consider the stock of nature. This relates to how much nature we have, what condition it is in and the extent to which it can provide those benefits that we depend on. The marine environment is highly interconnected, so the state of one habitat or species affects others.

"For example, the survival of some fish is almost entirely dependent on a habitat such as seagrass. Within the natural capital approach, we propose that with more seagrass - that is in higher quality - the fisheries benefit is likely to grow, and therefore that value is likely to grow."

Understanding Marine Natural Capital

Contrary to belief, the marine natural capital approach goes much further than simply estimating the economic values of marine ecosystems. Nature will always have an intrinsic value that is priceless, and we all value the marine environment in different ways. The problem is that our dependence on marine ecosystems has not been accounted for in our economy and decision making.

“Our lives are absolutely loaded with value-based decision making. We use valuation to choose where we live, what we have for breakfast, how we travel to work. All of these micro decisions imply that we are using a value-based decision framework. So, if we don't place nature front and centre of value-based decision making, then we risk that ongoing situation where nature is ignored, it is used and unaccounted for despite its essential importance to our lives and livelihoods.”

How do we protect and enhance it?

The answer to this is “gloriously simple” and a cause for optimism: if allowed to recover, the marine environment will bounce back quickly. What is needed is governance that enables its protection and restoration. This starts with addressing the key threats from areas such as overfishing, farming and sewage. Marine natural capital tools like *asset and risk registers* can be used to monitor our baseline of natural capital assets, the condition they are in and the pressures they are facing. These tools can be used to inform solutions such as marine spatial planning or byelaws to protect key habitats. This should not be restricted to the marine environment, either. Broader scale approaches are also needed to manage some of these threats coming from land-based systems.

The financial services sector has its own influence to remove pressures on our marine natural capital. They can reshape the systems and markets that have traditionally externalised nature so that they better reflect its value to our lives. Industry and the private sector can drive significant progress across society by acting as “good ancestors”.

“They can be part of the solution rather than the problem, and they can have a much longer-term view than our current political systems because they're thinking about investing for future generations. That's how we describe a good ancestor, and they can do this by using tools that already exist, by looking at either identifying or disclosing risk through things such as the TNFD framework and through potentially taking on tools that we have developed in the academic space like asset and risk registers.”

Pollution, Biodiversity and Local Action

The ocean is facing huge, global threats that can appear overwhelming. However, everyone has the power to help change our course. Our interview with Emily Cunningham started with the global issue of ocean pollution and then moved on to powerful change being driven at a local level.

Emily Cunningham MBE is a marine biologist and renowned ocean conservationist who has undertaken research expeditions around the world. After gaining first-hand insights into the state of our ocean, Emily co-founded [Motion for the Ocean](#), an initiative that empowers local governments to act on ocean health. Emily joined episode 11 of the podcast to discuss the threats of ocean pollution, what a healthy ocean could look like and how to get there. This includes the vital role that local councils can play.

A huge global problem

Ocean pollution is a massive issue that remains unchecked and unabated. Emily divides marine pollution into two categories: the visible and the invisible.

“Plastic is the most visible form of pollution.... I was down in a submersible in Antarctica, I saw plastic on the seabed and just burst into tears. I’ve seen nappies on coral reefs. I’ve rescued a sea turtle that was trapped in plastic strapping as it tried to nest on a remote island over a thousand miles from the nearest land mass.”

Emily’s experiences reveal how far-reaching marine litter is. However, this is just the tip of the iceberg. Another massively pervasive threat that we are still to fully understand is microplastic pollution. Trillions of microplastics find their way into the ocean each year, many of them released into the waterways when we wash synthetic clothing. These fibres are also found in the deepest parts of the ocean, in the air, and even in our bodies. Sewage discharges present another major issue, particularly around the UK. Recent data reveals that last year alone sewage was pumped into English Marine Protected Areas 14,000 times for over 100,000 hours.



However, it is the most invisible form of pollution that keeps Emily awake at night.

“My biggest concern is chemical pollution, specifically PFAS... a group of man-made chemicals, nearly 5000 of them used in everyday products and they are extremely persistent. Some can take over 1000 years to degrade, some don’t at all, and we call them forever chemicals. We know worryingly little about their effects on environmental health and human health.”

Forever chemicals are virtually impossible to avoid, being used across the products we use in our daily lives, from food packaging to cooking utensils and waterproof clothing. We are waiting to see the full effects of these chemicals on humans over time as their presence grows. Persistent chemicals such as PCBs have known to bioaccumulate in marine species despite being banned several decades ago. One of the last females of the UK’s West Coast Orca community, Lola, was found washed ashore in 2016 with some of the highest levels of PCBs ever recorded - 20 times higher than safe levels.

Pollution, Biodiversity and Local Action

The most incredible orchestra you have ever listened to

Marine pollution is a huge global challenge but one that Emily believes we can tackle. Further hope can be found in imagining what the ocean could be like if we allow it to recover, and what we stand to gain by doing so.

“If you think about biodiversity like... the most incredible orchestra you have ever listened to. What’s been happening on our watch is that each instrument is slowly falling quiet over time so the quality of that music is getting less and less... and it will get to the point where there’s just a few instruments that don’t work well together anymore and can’t function as an orchestra. I want to work to get that back, in whatever version it might be.”

Reversing this decline goes far beyond environmental benefits alone. In the UK this decline in ocean health has gone hand in hand with increasing socioeconomic degradation around our coastlines. A new approach, where we use the benefits that the ocean provides in a more sustainable manner, would boost ocean health. It would also support good quality jobs, create training opportunities and boost the mental health and wellbeing of local communities.

How do we get there?

Everyone has a role to play here. A top-down approach from national governments is needed to tackle water pollution, by enforcing meaningful water quality standards and regulating the use of harmful chemicals. There is opportunity for the UK Government to act as a global leader on ocean action, leveraging our international position to drive change. There is huge potential for collaboration with the private sector to redirect funds towards regenerative activities, instigating a systems change towards using business and financial systems for recovery rather than just minimising damage.

Emily’s take home message for the listener is that anybody can be a voice for the ocean. Individuals have the power to influence change, particularly through engaging with local political representatives.

“You may well be surprised just how ready those elected representatives are to help. That has been a big source of hope for me... as soon as I tried engaging with politicians from across the political spectrum at local and national level, I was shocked. It was a really good lesson that they are ready to help, they just didn’t have the information or awareness beforehand.... All of us, no matter where we live, can be that person who communicates an issue or a challenge where there might be action available, making sure your elected representative knows about it.”

Motion for the Ocean

Emily is co-founder of [Motion for the Ocean](#). The motion sets out eight evidence-based pledges that form a blueprint of what is within the power of a council to help with ocean recovery. At the time of recording, 28 councils had passed a Motion for the Ocean. Originally created for coastal councils, inland councils have also engaged with the Motion for the Ocean and adapted it to implement a source-to-sea approach⁴ which can have a great impact on preventing pollution from reaching our coasts.

“The aim of Motion for the Ocean is like a mindset shift... for councils to recognise that they have a role to play in tackling the ocean emergency, that things can be done at a local level which do have an impact, and so its embedding that within all of the decisions that they make.... The model motion is amendable, so we encourage them to adapt it to a local context which is really important as long as there is no diminishment in ambition, but they have all gone so much further than what we set them out to do.”

Ultimately, this mindset shift can deliver both environmental and economic sustainability in areas that have suffered from the loss of industry over recent decades. Supporting industry that is economically and environmentally sustainable will avoid falling into that trap again. Instead, coastal communities can become the focal point of a thriving blue economy.

4. The [Source-to-sea](#) approach looks at the strong interconnection between what happens on land, in our waterways and ultimately in the sea.

What does Ocean Restoration look like?

A sustainable blue economy will need to have a restorative impact on ocean ecosystems, but what does ocean restoration look like in reality?

In Episode 8, Dr Jean-Luc Solandt shared his insights on what ocean restoration looks like in reality, what the challenges are and how it can be scaled up. Jean-Luc has dedicated over two decades to marine conservation as a marine biologist and Marine Protected Area specialist with first-hand experience of marine restoration projects.

Drawing inspiration from natural history

To understand what we want to achieve through ocean restoration, we can look to the past for a reminder of what our clean and thriving ocean used to look like.

“The ocean of the world used to be much more productive systems. That means they used to produce a lot more living biomass, things that live in the ocean, like large numbers of fish and really complex and rich seabed habitats. So, it looked like a forest on the bottom of the sea. Those are the sorts of things we want to restore to. We used to have seagrass beds in excess of 70 or 80% of where they are currently existing. Oyster beds used to be the size of Wales in the North Sea. If we want to restore back to these sorts of areas, the scales of what these organisms are doing for us could be extraordinary.”

There are two ways to go about restoring areas of the ocean to rich and biodiverse states: passive and active restoration. The former focuses on removing key stressors and allowing ecosystems to recover naturally. Active restoration takes a more hands-on approach in near-shore areas. This includes better-known projects such as seagrass, saltmarsh and oyster restoration.



Harnessing innovation

Innovative approaches have been particularly successful in helping to aid restoration, as demonstrated by Advanced Mooring Systems in Plymouth Sound. These devices reduce the impact of moorings and anchoring systems on seagrass beds.

“What we've done with [the Marine Conservation Society's] partners at the Ocean Conservation Trust is introduce these advanced mooring systems that float the entire chain above the seabed using rather simple technology. And we've seen a 212% increase in seagrass density in 4 ½ years of the work taking place. So, if that's scaled up... that can have really quite significant impacts.”

Satellite technology can also be used to monitor the positions of fishing vessels, offering a tool to ensure that vessels are not damaging key protected and restored habitats. These solutions could help to reduce the inherent risk associated with ocean restoration projects, enabling them to become more attractive to financiers looking for returns on investment either in the form of ecological outcomes or financial returns.

What does Ocean Restoration look like?

Scaling up ocean restoration

Large-scale ocean restoration offers huge potential to tap into the many social and ecological benefits that marine species and ecosystems deliver.

“For example, oysters filter seawater. I think one oyster filters something like a litre of seawater easily every 10 to 20 minutes... so hundreds of thousands of them close to our shore will provide some of the water treatment services that are not being done effectively by our water companies. Seagrass beds are natural harbingers of life and support many, many fisheries like cod and sharks and cephalopods. So, by reducing the pressure on those beds and allowing them to grow, we exponentially increase the ability of the seas to provide for us other services.”

Considering how to approach the scaling up of ocean restoration efforts, Jean-Luc highlights the importance of economic assessments. These methods shine a light on the valuable ecosystem services that habitats provide, such as protecting our shorelines against rising sea levels, capturing carbon and supporting fish stocks.

“If we quantify these services, then we can start to get the capital invested at the scale that we need to. Instead of having lots of pilot projects - which I think is still the current situation in the UK - moving up to something that has significant effects at a country level. For example, there is a really good analogue for this which is the restoration of the Chesapeake Bay Oysters in the United States. Now, it's not just tens of thousands or hundreds of thousands, we're talking about millions of animals. The restoration of those animals in that bay has led to a vast increase in fisheries. It's been brilliant for people. The water quality has improved and it has involved the communities around it.”

Community impacts

The impact on communities is significant. It is worth remembering that the benefits of restoration projects extend far beyond economic value alone and should be felt first in the local communities associated with those projects. It is these communities that are key to the long-term success of restoration efforts.

“There is a lasting legacy of doing these things at scale because I think the necessary people power that you need to carry out the projects will lead to local understanding of their need and their protection in the future, so we never go back.... It's not just about the money, it's also quantifying the societal value of investing in these projects. And whenever we've done our work, even at small scale, the understanding and appreciation of the marine environment in local communities has been really rewarding - much more than just the pounds and pence associated with the system services value.”

Thriving marine ecosystems

We need to get ocean restoration efforts to a level where habitats, species and ecosystems become self-sustaining. By removing the stressors and allowing habitats to recover to this point, they will keep providing ecological, social and economic benefits indefinitely. This offers a glimpse into a brighter future ahead of us with thriving marine ecosystems.

“That's the beauty of these things. They're self-recruiting. You don't need to keep piling the money in. Once you've got a certain level of habitat or species at density, they will reproduce. And that's very exciting.”

3.



Policy & Governance Shaping the Blue Economy Sustainably

At national and international levels, we need to rethink our relationship to the ocean. How we do this can define our future & set the foundations for a sustainable blue economy. Governments have a crucial role to play in this and will have to collaborate on achieving a future in harmony with ocean health.

The UK's Role in a Sustainable Blue Economy

Ahead of the UK election back in 2024, we wanted to highlight what the UK Government could achieve through a sustainable blue economy and how they can do it.

Belinda Bramley is an environmentalist and independent blue economy consultant with a background in private finance. With knowledge of blue economy practices around the world, Belinda was perfectly placed to explain what a sustainable blue economy in the UK would look like and how to get there.

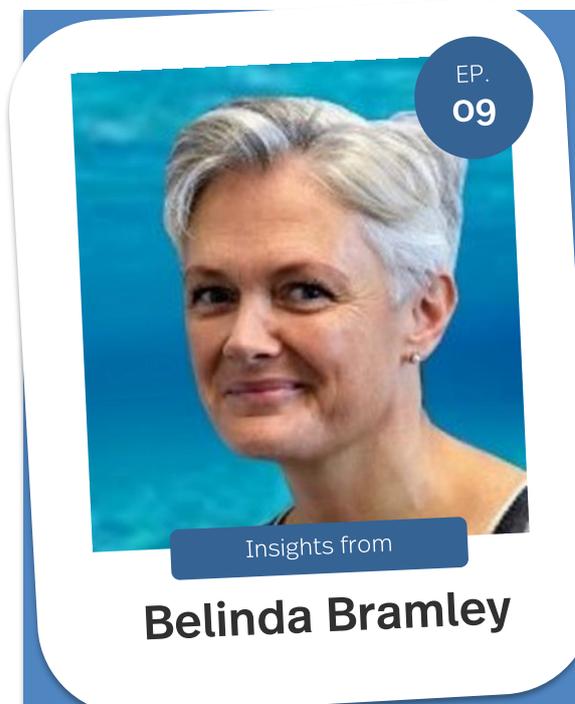
What is a sustainable blue economy?

We started the discussion by setting out what we are proposing with a sustainable blue economy. In 2021, Belinda produced a [report](#) with NLA International which sets out clear principles for a sustainable blue economy. These are the RAISE principles.

“We think the blue economy should be regenerative of the marine environment... it should be adaptive to new ways of working, new information sources and, of course, to climate change. It should be inclusive of all stakeholders in the marine environment, particularly those that depend on the marine environment. It should be sustainable economically and ecologically, and evidence-led, by the best available science but also traditional knowledge.”

A sustainable blue economy needs to protect and enhance marine natural capital and human social capitals.

“We can know that it is [sustainable] if we look at its core assets, which are actually the natural and human assets, and only if they are sustained or increasing, or improving over time, do we know that our blue economy is actually sustainable. By measuring the quantity and quality of these currently invisible assets alongside our traditional economic measures, we have a more robust and complete picture of progress over time. This then allows governments to develop economic strategies and policies geared towards regenerative, inclusive and sustainable activities rather than over-exploitative ones.”



Fortune favours the bold

Time is of the essence when it comes to developing a sustainable blue economy, and the UK Government would be rewarded for being proactive. This is for two reasons.

Firstly, it is far more cost-effective to act now than to wait. We face growing problems around water quality, pollutants, pressures from climate change and greater levels of deprivation in coastal communities. Investing in the protection and restoration of valuable marine ecosystems today can help to address these issues and is far more cost-effective than letting these ecosystems degrade. It would reduce the socioeconomic impact of these pressures and would increase the climate resilience of coastal areas and communities. It is also necessary for meeting key targets such as protecting 30% of our seas by 2030, achieving Good Environmental Status in the marine environment and achieving net zero.

A robust and strategic approach to marine spatial planning can help us achieve these targets in an increasingly congested sea space.

The UK's Role in a Sustainable Blue Economy

Secondly, investing in ocean health would allow governments to take advantage of new opportunities and economic benefits. For example, the UK could capitalise on leading capabilities in areas like subsea technology, while Wales is particularly well placed to develop offshore tidal energy. Many of these opportunities would be centred in coastal communities, creating jobs and prosperity while boosting ecological and economic resilience.

“If the Government looks at the sustainable economic opportunities to be harnessed over time from our sea space, they should be able to see a wealth of opportunity for environmental and social regeneration in what have become neglected parts of the UK. Alongside this there also has to be a just transition for the industries that have overexploited the marine environment... and we can explore relatively new sectors like restorative multi-trophic aquaculture, with seaweed and shellfish that can clean our coastal areas and form part of this transition to a more regenerative and climate positive (or neutral) approach to the blue economy.”

How do we achieve this?

A sustainable blue economy offers the next UK Government a new way of doing things in a way that can be inclusive, equitable and regenerative. Being proactive in these steps will allow the UK to take advantage of these opportunities and demonstrate global leadership on ocean issues. So how can the UK Government set the wheels in motion?

A key starting point is to create an *“inclusive and holistic blue economy strategy... that could be supported by a panel of relevant UK experts.”* This would generate public investment and policy certainty which can help to entice further investment and the creation of new markets. A variety of sectors and stakeholders will play their part in establishing a sustainable blue economy, so a blue economy strategy can provide the focal point to coordinate their efforts and drive progress. Effective partnerships formed under a clear plan can be seen in countries like Canada and Australia.

“What characterises them is a clear political vision and ambition for the blue economy, which provides the mandate and direction of travel for research institutes, the private sector, NGOs and community groups to then respond and work with.”

Drawing on success stories around the world, including in the Seychelles and Canada, it becomes clear that stakeholder engagement is pivotal to achieving this. This means sharing the strategy and delivery mechanisms with potential stakeholders and using their feedback to ensure it is inclusive and fit for purpose.

“This engagement is key to community buy-in, without which efforts cannot be sustained, and it allows governments to tap into new ideas and important cultural knowledge. There are lessons we can all continue to learn from our coastal communities, which need to be embedded into how we think about the blue economy”.

Belinda paints a clear picture of what is needed in a blue economy strategy. An important component of this plan would be a coherent network of Marine Protected Areas across the UK that *“maximise biodiversity conservation under a changing climate”*. Strategies are then needed to address key stressors such as water pollution. At the time of writing, these strategies are emerging through the UK Government’s Water Special Measures Bill, and the Government’s plans for the Independent Water Commission.

At the same time, investment is needed to monitor species, ecosystems and these cumulative pressures. This will build a clear baseline of the state of our seas and whether progress is being made. Similarly, accurate accounts of our natural, human and social capitals are needed to benchmark the sustainability of the blue economy. A comprehensive UK Blue Economy Strategy would need to include ongoing plans to address any data gaps that are found.

This would not all happen overnight, so precautionary measures could be used to halt the decline in marine health in the meantime:

Reaping the rewards

There are many causes for optimism to be found within a sustainable blue economy. Belinda closed with an important message that marine life can rebound quickly. With the notable exception of the deep sea where species have much slower life cycles, many areas of the marine environment would show a quick response if we were to remove the key pressures. In that sense, we would not have to wait long to reap the benefits of effective sustainable blue economy strategies.

Global Collaboration and Frameworks for Preserving Ocean Ecosystems

In episode three, Minna Epps, Head of the Ocean Program at the International Union for Conservation of Nature (IUCN) joined us to discuss international collaboration and frameworks for preserving ocean ecosystems and marine biodiversity. The episode takes a particular focus on the significance of the landmark Biodiversity Beyond National Jurisdictions (BBNJ) treaty.

Hot water

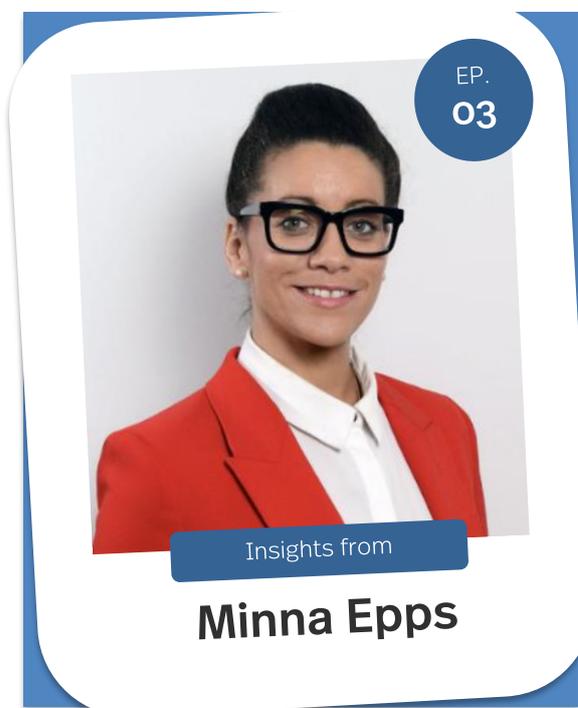
The conversation started with a temperature check on the state of the ocean. 2023 was the hottest year on record for ocean temperatures as the ocean absorbs extra heat and carbon dioxide. This is contributing to fundamental threats including ocean acidification and marine heatwaves. In Minna's own words, "the ocean is becoming more sour, breathless and warmer." This has implications for biodiversity, human health and our economy, too. Minna set the scene of what this means and what needs to be done.

"We know that the main threats to the ocean [are] really overfishing, pollution and habitat loss, but that is exacerbated by climate change. So, you have [these] climate change driven multi-stressors and it really compromises ocean health and its resources, and ultimately us because it is our support system. So, we cannot survive and thrive if we don't have a healthy ocean. We know what we have to do – we have to remove the threats, build resilience and enhance the recovery to restore the ocean."

The High Seas Treaty

Policy makers and legal frameworks are necessary to meet these challenges. However, most of our ocean lies beyond national boundaries. The high seas, or Areas Beyond National Jurisdiction, make up 64% of the ocean. Governing this area therefore requires international collaboration.

A general legal framework governing the use of world's ocean was set out in the [United Nations Convention on the Law of the Sea](#) (UNCLOS) forty years ago, but the ocean generally remains governed



by several disparate and fragmented authorities that deal with independent aspects of the ocean space. For example, the International Maritime Organization (IMO) sets standards for shipping while the International Seabed Authority (ISA) regulates the use of the seabed.

A major step forward was presented by the [High Seas Treaty](#), or BBNJ Agreement (Biodiversity Beyond National Jurisdiction), agreed in 2023. Two decades of talks culminated in days of round-the-clock negotiations between UN member states that were finally concluded late into a Saturday night in NYC.

"There is no governing body that has a cross-sectorial mandate, or acts as a regulatory authority in that sense. So, the biggest milestone in decades was the recently agreed High Seas Treaty... It was in the making for almost two decades and in March last year [2023] the actual text was finally agreed. I was there for what we called the 'UN sleepover' and everybody was sleeping on the floors and corridors and didn't know what the outcome was going to be. In June, it was adopted and in September it was open for signature by the different states."

Global Collaboration and Frameworks for Preserving Ocean Ecosystems

Sixty ratifications are needed to get the treaty entered into force. To date, there are many signatories but only a handful of ratifications. Reaching that milestone would be a significant step towards sustainable governance and collaboration across this vast area of the planet.

“The BBNJ Treaty is absolutely crucial. Not only is it [crucial] to demonstrate that multilateralism is still alive, but it also really provides a platform to collaborate. It is not there to undermine an existing [framework], but really to strengthen existing instruments.”

Minna explains four key pillars found in the treaty. The first focuses on area-based management tools, including the establishment of marine protected areas. The second considers strategic environmental impact assessments to make sure that economic activities in the ocean are not damaging the environment. The third pillar focuses on ensuring equitable access to - and sharing of - marine genetic resources. The final pillar looks at capacity building and the transfer of technology.

Harnessing technology

Although the framework promotes collaboration, there remains challenges around implementation and enforcement. The ocean is vast and there is not necessarily enough available capacity and resources to monitor protected areas outside of national territories. However, there is optimism to be found in using emerging technologies and artificial intelligence to make means of implementation more achievable and equitable.

“For example, [the IUCN] are collaborating with the Allen Institute for Artificial Intelligence that provide the Skylight technology and are willing to provide that for free for any country who wants to establish a Marine Protected Area in the High Seas, once that mechanism becomes available.... So, with the new technology I am still quite hopeful and I think if you provide the right training – not only with the use of technology – but also the analysts to decode the machine learning, I think that will set us off on more equal terms.”

Equity and justice across generations

Ocean equity and justice are crucial components to embed into these international agreements. There needs to be an equitable participation and representation of all stakeholders when creating these instruments.

“All the stakeholders or rightsholders have to have a seat at the table.... The Areas Beyond National Jurisdiction are actually common heritage of humankind... it belongs to everybody. You need to have that representation and that means you will have to have that diversity, equity and inclusion in the various delegations... but also, to make sure that its intergenerational.”

This extends to the diversity and inclusivity of the delegations themselves, including an intergenerational representation. After all, it is the younger generation who will become our future leaders. Involving younger generations in shaping these international agreements will encourage their participation and stewardship into a brighter future.

Local Communities and Indigenous Knowledge in the Blue Economy

The insights of Mere Takoko in episode 7 illustrate the deep understanding and connection of the Indigenous Māori to the ocean and how [Māori knowledge and values](#) can guide a much more sustainable approach to our seas.

Mere is a descendent of three Māori Iwi (tribes): Ngāti Porou, Te Whānau a Apanui and Rongowhakaata. Her work is driven by this background and an ancestral connection to the ocean. Mere is former vice president of Conservation International Aotearoa New Zealand and has founded the Hinemoana Halo Ocean Initiative, named after the goddess of the ocean. She is now Chief Executive of the Pacific Whale Found and co-founder of the Moananui Sanctuary Trust which continues to focus on achieving legal personhood for whales.

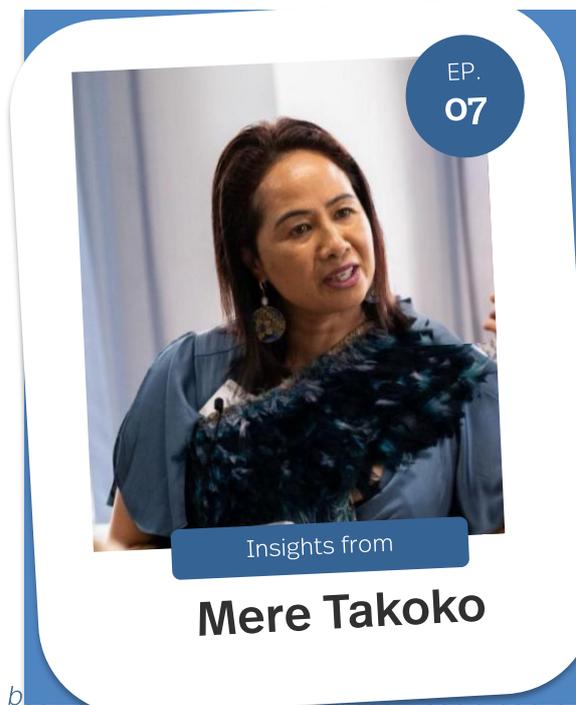
In March 2024, the He Whakaputanga Moana (Declaration For The Ocean) was signed by Polynesian leaders. This initiative was spearheaded by the Hinemoana Halo Ocean Initiative and grants legal personhood to whales, recognising their vital role in ocean ecosystems. The declaration is imbued with values that shape not just how we should interact with the whale, but how we relate to the ocean and the many other stakeholders that interact with it.

Indigenous leadership

The first value is *rangatiratanga*, the right to exercise autonomy and leadership. This reflects a strategic push for more leadership for indigenous people who “look after some of the world’s last remaining biodiversity and irrecoverable carbon.”

To achieve this, the indigenous voice needs to have the right platform and support. On larger international fora, a deprogramming is needed so that the biggest and loudest person in the room does not dominate the attention.

“Often the indigenous voice is a sideshow. It is used to embellish mainstream views and to justify them,



by indigenous people are not at the top echelon of any kind of decision making...The sideshow is a way to placate indigenous voices without actually giving them a meaningful platform.”

To embed indigenous knowledge into decision making across these international processes, communities need to be involved from the beginning.

“It all starts with the basics – meaningful consultation. Not simply going in and informing indigenous communities of decisions already made. That’s been a classic approach. There has to be genuine dialogue around how it is you go about incorporating indigenous knowledge. That actually begins at the initial policy planning and development stage and not after the fact.”

Adopting this value would empower local communities to lead us in a more sustainable relationship with the marine environment. It would also help to avoid situations where projects fail due to a lack of community buy-in, as has been seen with blue carbon projects.

Local Communities and Indigenous Knowledge in the Blue Economy

Guardianship and traditional knowledge

The second value is *kaitiakitanga*, an ethos of guardianship. This value is a departure from the conventional approach within the blue economy that looks to extract and utilise resources provided by the ocean.

“It informs us that when we interact with the ocean we are interacting with kin. We are not resource managers. That’s a completely foreign view to us. We live in kinship with the ocean.”

The intricate relationship of Māori with the sea contains long held knowledge of ocean ecosystems that can plug key gaps in our understanding.

“We see traditional knowledge as complimenting science and filling in vital gaps based on years of observation. Some of this knowledge is thousands of years old and it is very practical. That’s the beauty about what we are trying to do with Hinemoana Halo. We are giving traditional knowledge the same space as science and [as result of that] the scientific community is going to be able to glean new kinds of information.”

Respect across the community

The third value is *manaakitanga*, which represents kindness, respect and reciprocity to others. In this context, it is about promoting a sense of caring across the many nations, communities, organisations and individuals involved.

“I don’t believe it is complicated. It really just comes down to basic respect, common courtesy and an ability to be a good partner, to share knowledge and resources and be committed to principles of equity in the way you go about designing your business.”

The enduring sustainability of the blue economy can benefit greatly by giving value and space to different cultural sensitivities and ecologically sustainable practices. One such example would be respecting the intergenerational Māori approach. This would help to avoid the pitfalls of prioritising short-term gains, choosing instead to favour long-term success and stability.

Navigating the blue economy

The values embedded in the He Whakaputanga Moana can guide us in navigating the complexities of a sustainable blue economy. This begins with empowering the guardians of key ecosystems and harnessing generations of knowledge in indigenous cultures. There are many different stakeholders with a role to play, each with their own perspectives and knowledge. Principles of respect and reciprocity can ensure that all communities can contribute meaningfully towards a sustainable relationship with the ocean that endures across generations.

4.



Blue Finance

Powering the Engine of the Blue Economy

Several of our guests are leading the application and growth of blue finance. This is an essential tool for developing and shaping the blue economy while plugging the huge funding gap for ocean health.

The Role of Blue Finance

Ted Janulis is Founder and Principal at Investable Oceans, an investment hub that looks to market-based investments to unlock capital in a sustainable blue economy. In a conversation at the 2024 World Ocean Summit, Ted talked through the role of blue finance in building a sustainable blue economy. This started with the current state of sustainable blue finance and moved onto some of the opportunities on the horizon.

Sustainable finance has grown globally in recent years, with average annual climate flows reaching \$1.3 trillion USD in 2021-2022, almost double the levels seen in 2019-2020. However, only a small fraction of climate related finance flows towards sustainable ocean investments.

The global ocean economy, covering areas like shipping and extraction of resources, has been developing for decades. The blue economy, more specifically, is about making this ocean economy more sustainable, maintaining our resources while still allowing development and investment. This concept has taken off over the last decade.

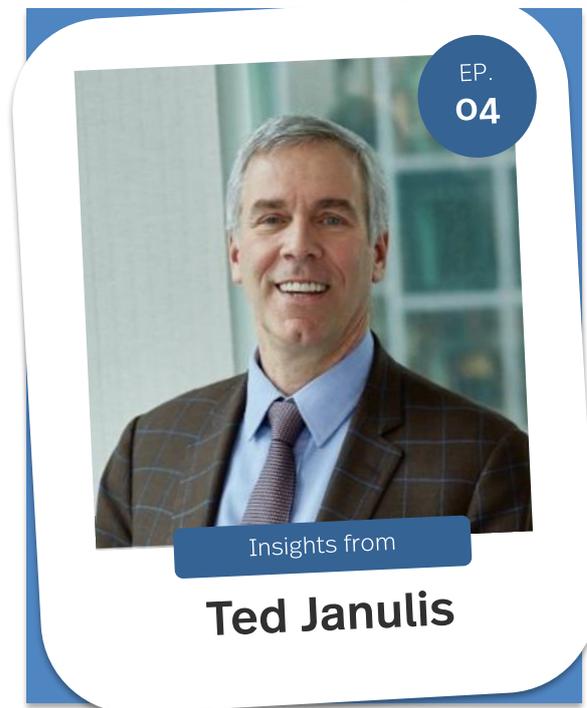
“It’s a new thing. It’s accelerating fast. There are over thirty funds out there. They are doing plastics, waste management, fisheries, energy. I think that momentum is going to continue, and I think it’s a good base to build on but, still in the grand scheme of things, it’s not nearly all the capital that we need.”

Scaling up the blue economy requires a shift in the way that capital flows into the ocean.

Building bridges

Ted explains three primary ways that capital can flow into the ocean: donor capital, market-based capital and blended finance.

“Donors can be individuals, foundations, countries, multilateral banks...Their defining element is that they don’t expect to get that money back. It’s a donation. They expect effective stewardship. That’s really been the backbone of the blue economy...but that’s measured in the billions or



tens of billions. The most detailed review of what it would take to accomplish the goals of Sustainable Development Goal 14 is \$150 billion USD net new investment each year through 2030. So, I think there’s an increased view that donor capital won’t get us there without help from other sources.”

At the other end of the risk-reward spectrum is market-based capital. Markets such as equity and fixed income markets are on a different scale, worth hundreds of trillions of dollars. However, tapping into this vast pool of finance is challenging without a clear return on investment.

To bridge the gap between two ends of the financial spectrum, we look to blended finance, or catalytic and impact investments. This approach looks to take valuable donor capital and use it in a way that will bring in market-based investors. Bridging this gap to tap into the larger capital markets will be key to catalysing large scale blue finance and meeting the goals and targets of SDG 14 – Life Below Water.

“This blended finance area is really important because market-based offerings are not currently growing fast enough to get to that \$150 billion USD annual need that we noted above. So, there’s a strong imperative to create blended solutions.”

The Role of Blue Finance

Many of the world's largest financial institutions have turned their attention towards climate finance and creating dedicated climate funds. Ocean finance stands to play a growing role in this.

"[There is] this increasing awareness that ocean and climate are twinned, that you can't fix one without fixing the other, and [institutions are] also starting to see the ocean as source for solutions. If you think of it that way, then those doors open to much bigger capital pools as well."

Catalysing growth

To catalyse this growth, Ted points to the regulation of carbon markets and pricing of carbon as catalysts for tapping into financial markets in the nearer term.

"So many of the ocean's issues are carbon oriented. In terms of the core issue of greenhouse gases, some version of regulation on carbon markets, or a price on carbon, would - in a lot of people's minds - be a total game changer...That would allow you to price more kinds of instruments and securities so people could trade them and would really open up the markets a lot. Anything that goes in that direction of pricing carbon I think is very powerful."

Beyond regulation, education and communication can also be particularly impactful through effectively translating key issues to influential stakeholders, whether that is institutions or entire countries.

"They have got so much to do, so many incomings. If they have multiple things coming in that are kind of the same but still require individualised treatment, anything we can do to clarify that front end of the funnel, any time we can simplify things and try to package them up to make them more understandable, that's great. It's such a huge amount that has to be done. Any ways that you can focus it and make it more impactful, that all accelerates what we are doing."

Radical collaboration

Looking ahead to a big year of climate and ocean conferences, including the UN Ocean Conference in 2025, Ted tries wherever possible to channel the benefits of "radical collaboration". Investable Oceans is teaming up with ORRAA (The Ocean Risk and Resilience Action Alliance) to boost collaboration and share best practices on blended finance and harness the benefits of shared knowledge and experience.

"What we are trying to do is think about ways to pull those folks together, get the learnings from deals that have been done and use those as a way to catalytically create more of that and catch that lightning in the bottle. We are interested in connecting with anyone who has thoughts about blended finance or worked on it from any of the various perspectives, whether it's the donor or the project developer or the people who do technical assistance."

Collaboration can bring together those who are heading in the same direction and enable them to get there faster. With time being of the essence, this could make all the difference in using blue finance to turn the tide on climate and biodiversity.

Financing Ocean-Based Solutions for a Resilient

In Episode 6 we spoke to Dorothée Herr about financing ocean-based solutions for a resilient future.

Dorothée works for the Deutsche Gesellschaft für Internationale Zusammenarbeit where she advises on Ocean, Climate & Sustainable Finance. Previously she led the IUCN's international policy and private finance work on ocean-based solutions. Dorothée has had an influential role in initiatives such as the Blue Natural Capital Financing Facility and Blue Carbon Accelerator Fund.

Ocean-based solutions

The term ocean-based solutions can cover many activities in the sea, from the regenerative to the more extractive, but where we see the biggest gains are those solutions that have a positive impact on the wider ecosystem.

“Where we get the biggest win-win for both climate, biodiversity - and I would also add broader development and food security - is when we restore and sustainably manage our ecosystems.”

This includes restoration of ecosystems like blue carbon habitats but extends to many other areas such as sustainable aquaculture. Combining these elements can help to mitigate and adapt to the effects of climate change, increasing our resilience as the world changes around us.

Part of this adaptation also includes combining nature based-solutions with infrastructure, or green-grey infrastructure. Here, nature-based solutions can actually deliver economic gains when combined with other structures such as offshore wind.

“Examples could be along the shorelines where you combine sea walls or other types of concrete barriers that can actually help protect the mangroves or coral reefs around it.... You can also look at ways of how nature & nature-based make the maintenance cost for that infrastructure go down. So, there is also an economic benefit for infrastructure that can be protected by coastal ecosystems on top of the biodiversity or fisheries spillover effects.”



The role of governments

Scaling up private finance into ocean-based solutions is important for building a sustainable blue economy. However, these types of projects remain underfunded, risky and can struggle to deliver attractive financial returns. So, what needs to be done to bring more private finance into ocean-based solutions? This is where governments and policymakers have a role to play.

If governments can play their part, then ocean-based solutions should become less risky and costly, but the private sector can help to drive progress here by demonstrating a willingness to take risks on these investments and showing what is possible.

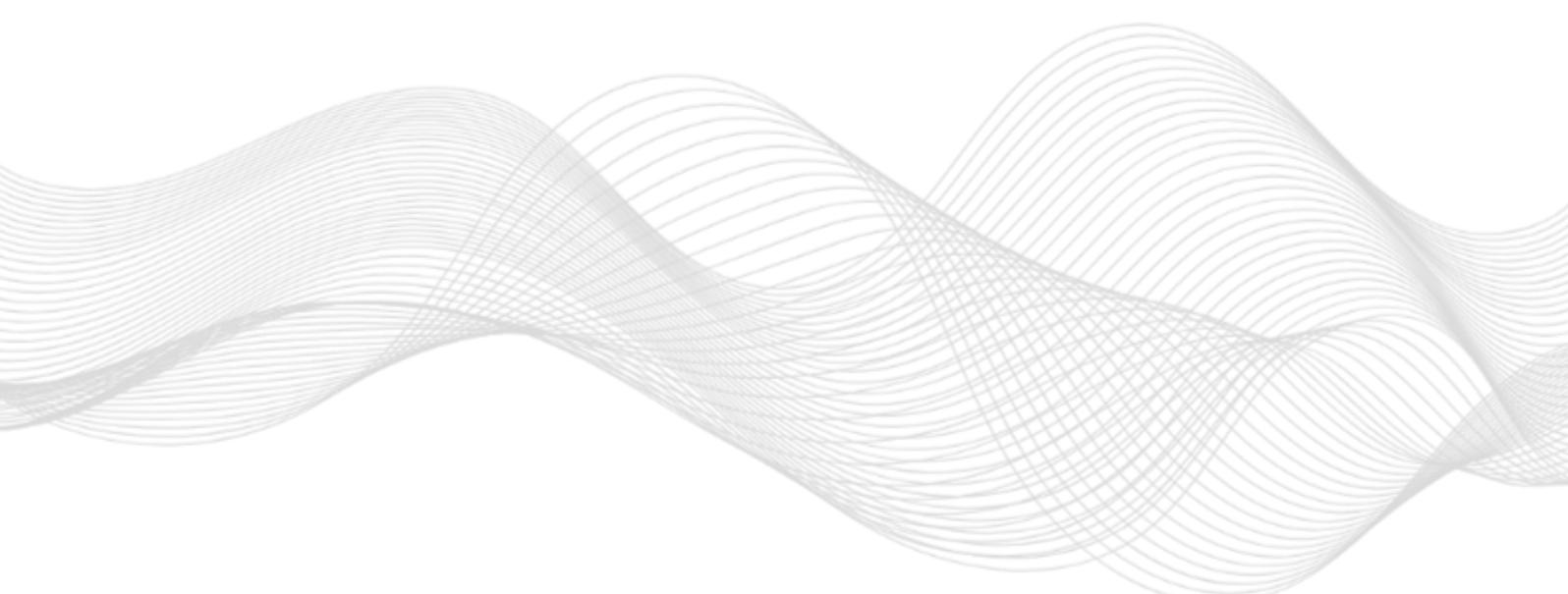
“Investors big and small need to become less risk averse.... We see investors take risky business in other areas but not when it comes to nature. I hope that we see much bigger initiatives, bigger players, doing the right move in the right direction - but faster and with higher levels of commitment.”

Financing Ocean-Based Solutions for a Resilient

Replicable success

By bringing these elements together, countries have a chance to show leadership and set the precedent for successfully scaling up investment into ocean-based solutions, creating success stories that can be replicated elsewhere.

“What countries like the UK or in Europe can really show is how they apply measures or planning instruments like marine spatial planning and how those efforts can also be transferred in terms of skills or technology transfer capacity into other coastal countries around the world.”



Closing the Loop: Investors and the Future of the Blue Economy

Will Oulton has expertise in two sectors that are essential to a sustainable blue economy: conservation and sustainable finance. For the past 5 years, Will has been a trustee at the Marine Conservation Society, where he is now Vice Chairman. Will supports the charity with expertise from 25 years in sustainable finance, including roles as Head of Responsible Investment for global asset managers First Sentier Investors and chair of the European Sustainable Investment Forum.

The discussion explored the way that investors currently view the blue economy and what needs to change to develop that. The issue of microplastics and chemical pollution provides an apt case study of where ocean issues become relevant to investors on land.

The missing piece of the jigsaw

In recent years we have seen the financial industry increase its focus on climate and biodiversity issues. Although this is welcome progress, it remains limited to terrestrial themes such as deforestation and land use. There is a big blue piece missing from the jigsaw.

Impacts on the ocean are not obvious to investors, nor easy to trace. However, from a conservation perspective it is important to remember that most ocean impacts originate on land. This is where investors do have oversight of what is happening in their portfolio.

“Around 80% of the pollution that gets into the ocean comes from terrestrial-based economic activities. So, these companies are in your portfolios. They are producing chemicals. They are producing plastics [and] other pressures that end up getting into the ocean and that is causing real problems for marine biodiversity... They didn't start there. They started in some economic activity based on land.”



The relevance to investors is that these activities are taking place within their portfolios. They have the power to raise these issues to companies that they invest in or even move money away from those that are not addressing the issues. From a conservation and sustainable finance perspective, raising this awareness is key to shifting the dial. Getting the sector to think beyond the terrestrial realm is a challenge, but necessary if we are to ensure meaningful climate and biodiversity policies are being implemented.

“I don't believe anybody can have a credible nature or biodiversity approach or policy without including some reference to the impact on the ocean. That might sound a bit harsh, but it's true. Hopefully more and more institutions will begin to think in that way and expand beyond that terrestrial lens.”

Closing the Loop: Investors and the Future of the Blue Economy

Polluted portfolios

Ocean pollution is an area where investors can use their influence across their portfolio. Chemicals and microplastics are incredibly persistent and pervasive, accumulating in all areas of our planet, our food and ourselves. Trillions of microplastics are released into the environment every week from synthetic clothes in our laundry. However, recent innovations have created filters that can capture up to 90% of these fibres in washing machines. Will see an opportunity here for investors to play their part.

“With an investor hat on, I knew that many institutions will be owning the companies that manufacture these machines.... That was the beginnings of an [award-winning] collaborative investor engagement programme which is being led by First Sentier Investors to try to encourage and persuade manufacturers of domestic and commercial washing machines to fit these filters as a standard feature.”

Around 35 institutions from around the world supported this programme and conversations began on engaging companies in addressing the problem. Responses were mixed. Some leading companies were actively working on the issue as well as raising awareness. One company even produced a washing machine with a filter built into it. Other washing machine companies still see it as a separate problem beyond their scope, pointing instead to the manufacturers and producers of textiles and associated pollutants. Nevertheless, these collaborations and discussions are a potential lever for change.

There is now also an investor group on hazardous chemicals looking to remove them from manufacturing and production processes.

Pressure from investors, businesses and campaigners has created momentum for legislative change. Filter technology is now mandatory in washing machines sold in France and we can expect similar legislation to follow elsewhere. This is already being discussed in Australia, some US states and in the UK.

What next for the blue investments?

Will identify key areas of attention to get the ocean integrated into the investment world. A starting point is a clear agreement on which industry sectors are connected to the blue economy. Following this, investors would welcome much more information and data for assessing ocean and marine biodiversity risks in their portfolios. Without adequate data, there are no financial benchmarks and indices to measure the performance of different sectors linked to the ocean economy.

On a more fundamental level, ocean literacy is important. Despite the progress on climate risks and impacts, there is a big oversight on the huge role that the ocean plays in regulating our climate. Progress here can be as simple as asking the right questions to understand where portfolios are exposed to ocean issues and what risks may arise from that.

“The first step is getting an understanding of how the ocean and marine biodiversity fit into your overall approach to biodiversity and nature. That is the topic of the day. And then try to get your advisors, if you are asset owner, or asset managers, to really look at what is the exposure of portfolios to the ocean and marine biodiversity risks. Then you have got the platforms to think more strategically about how you manage your exposure and seek opportunities from those companies that are really innovating in this space.”

Will part on a note of positivity: endorsing the continuation of the discussions held across this series. Collaboration and knowledge sharing can drive action, as we are seeing on chemical and plastic pollution. Ultimately, the simple act of raising awareness, educating ourselves, and bringing others into the conversation will keep us moving in the right direction.

The Role of DFIs in the Blue Economy

Dr Pushkala Ratan is the Climate Finance Lead for Asia at the International Finance Corporation (IFC) - a member of the World Bank Group and the largest global development finance institution. Pushkala has led significant advancements in blue finance at the IFC, spanning blue bonds, blue loans and the IFC Blue Finance Guidelines. Our conversation with Pushkala explored the role that the IFC plays in growing the blue economy and how blue finance will develop in the coming years.

The IFC and the blue economy

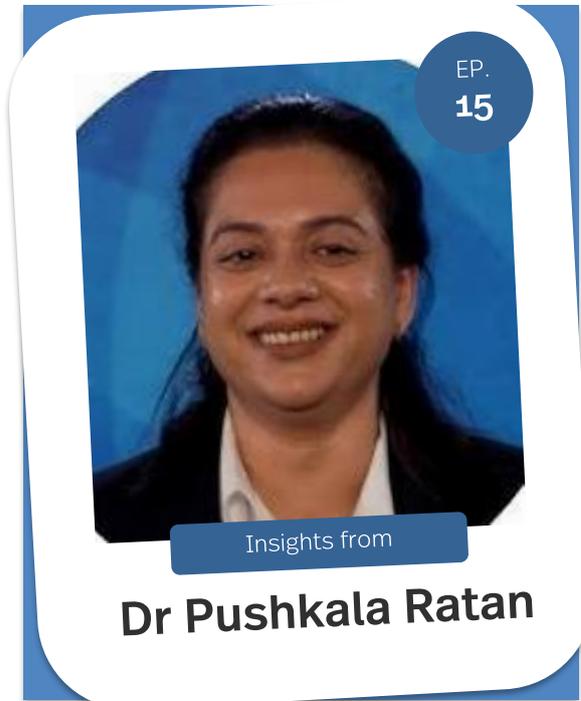
The IFC invests in private sector growth to improve livelihoods in developing countries. Much of the developing world depends on the blue economy for livelihoods and food security. The blue economy depends greatly on healthy marine ecosystems that are facing immediate threats linked to climate change.

“This makes blue finance indispensable, and the private sector plays a critical and significant role in keeping marine ecosystems waste and pollution free while enabling industry to thrive and generate new investment options.”

A starting point was to clarify what constitutes a blue investment. Here, the IFC has led the way with the publication of the IFC’s [Guidelines For Blue Finance](#).

“We realised in 2020 that investors and issuers who are keen to finance the blue economy faced one foundational problem, and that was a critical one, and that was a [lack] of standardised guidelines. Without guidelines, issuers, borrowers, investors, wouldn’t know what qualifies as blue and furthermore perhaps have different interpretations.”

These guidelines became an important foundation for blue finance and have been incorporated into national taxonomies including in Sri Lanka and the



Philippines. Ørsted notably became the first energy company to issue blue bonds in line with these guidelines too.

The IFC acts as the private-sector arm of the World Bank Group. This means it operates like other commercial actors investing for profit and commercial value. This sets it apart from other Development Finance Institutions as it must find additional value to its transactions beyond concessional finance. Partnerships and collaboration are key to this.

“There are multiple ways that we are pushing the blue finance topic and sector development: by developing internationally recognised guidelines for blue finance, including guidelines for the private sector; working with the financial sector players and institutions on innovative instruments; but equally with corporates as well, mobilising institutional capital towards blue finance; and investing directly and specifically in blue projects.”

5. [Concessional finance](#) refers to finance offered at below the market rate to developing countries by financial institutions (such as development banks) with the aim of supporting environmental or development objectives.

The Role of DFIs in the Blue Economy

Since 2020, the IFC has provided around \$2 billion USD to private institutions in blue loans and bonds. This included Thailand's first blue loan – a \$300 million USD loan to [Indorama Ventures to support](#) the recycling of 50 billion plastic bottles per year by 2025, diverting them from landfill or the ocean. \$10 million USD was invested in the [Circulate Capital Ocean Fund](#) to address plastic pollution and strengthen the circular economy in South and Southeast Asia. The IFC also subscribed up to \$100 million USD to a blue bond issued by [BDO Unibank](#) to tackle water pollution, a major threat to both the Philippines and the blue economy.

The next step for the IFC is to create a [global blue bond investment strategy](#) in partnership with T. Rowe Price. This will support blue investments in emerging markets, aiming to increase the quality and quantity of blue bond issuances that offer competitive returns while supporting ocean health.

Overcoming hurdles

Those working in the blue economy will be familiar with the current obstacles to raising blue finance: knowledge gaps around the blue economy and project eligibility, establishing a pipeline of bankable projects, and bridging the finance gap for smaller projects where mainstream financing options are harder to find. On top of this, there is an apprehension around greenwashing that will need to be assuaged with clear metrics and indicators for monitoring and verification.

“It really comes down to a couple of these important challenges that we come across quite often, and perhaps even more in emerging markets, around knowledge, capacity building, bankability, a solid pipeline and the risk appetite for the financial community to come into these.”

However, these challenges have been faced before within green finance. There is also a growing awareness that the development of the blue economy overlaps with more established net-zero

and climate strategies. For investors, financial institutions and governments, this presents a great opportunity for new markets, diversification and a broader customer base.

“If we can find solutions [and] work through the challenges... it helps to capture a huge customer segment of untapped financing potential in the blue economy that several companies may not have considered. It opens them up to a wider investor base and a value-added offering. The blue economy is so interlinked with health, jobs and livelihoods, in addition to climate change, that I think it appeals to a wider set of investors and issuers.”

What to expect on the horizon

Pushkala and the IFC are optimistic for the next couple of years following the surge of interest in blue bonds. This reflects significant sums of investment potential.

“The ocean economy is expected to be worth \$3 trillion [USD] by 2030 and employing about 40 million people. We recently commissioned a market research study and that indicated an immediate investment opportunity of about \$90 billion [USD] in the blue economy across selected emerging markets globally.”

As this potential gets realised, we can expect the blue finance landscape to evolve and diversify, as has been the case with green finance. Given many of the existing principles and foundations can be adopted from green finance, blue finance could develop at a faster pace than green finance did. In doing so, Pushkala expects to see changes in the types of projects being financed. Green finance initially focused on renewables before expanding to other areas such as agriculture and electric vehicles. Similarly, advances in blue finance could see investors expand their comfort zones from themes like water treatment and plastics towards the many other segments of the blue economy that are rich in potential.

Scaling Private Finance in the Blue Economy

Willem Visser is a portfolio manager in emerging markets and impact at T. Rowe Price, a global investment management firm that is now turning its attention towards the blue economy. Willem shared the motivation behind a new strategy for developing the blue bond asset class, and what to expect as blue finance looks to replicate the rapid growth of green finance.

Funding Sustainable Development Goals

The motivation behind a push for more blue finance is to address the underinvestment into Sustainable Development Goals 6 (Clean Water and Sanitation) and 14 (Life Below Water). Both goals are fundamental to sustaining life on Earth, and yet they remain the most underfunded Sustainable Development Goals. It is a particular struggle to draw from the vast flows of global private finance.

"In order to reach our SDG goals by 2030, we would need almost 290 billion [USD] - on an annual basis - of additional investment into these SDGs. I believe no one really disagrees with the value of clean water, but it feels sometimes easier to fund a Mars exploration than clean up the water on our own planet."

T. Rowe Price focus on emerging markets where it is believed the potential impact and risk-to-return ratios are greater. One ambition is to develop the blue bond asset class. This is being delivered through the Blue Economy Bond Strategy in collaboration with the International Finance Corporation (IFC). The aim is to grow the nascent blue bond market, replicating the growth seen with green bonds and increasing funding for these SDGs.

The Blue Economy Bond Strategy

Today there are not enough blue bonds available in emerging markets to create a well-diversified portfolio. To navigate this obstacle, T. Rowe Price and the IFC have adopted a novel approach where



the portfolio is built over two different phases. In essence, the first five-year phase creates a "funding portfolio" made up of impact bonds⁷ that raises capital to be reinvested in the second phase into a "target" portfolio made up of blue bonds.

"The first phase we consider is the funding portfolio, and then [the second is] a target portfolio. In this funding portfolio, what we do [is] we would construct a portfolio of well-diversified emerging-market corporate impact bonds that have maturities of up to 5 years and mature following a laddered approach. This allows us - with the capital we receive from the bonds that mature - to reinvest those in to-be-issued blue bonds, such that over the course of the next five years the funding portfolio will gradually transition into a target portfolio that will consist of 100% to-be-issued blue bonds."

By the end of the first five years, capital will have been reinvested into a portfolio of blue bonds that will mature over the subsequent five years. After ten years, all bonds will have matured and the investment - plus interest - is returned to investors.

6. [Impact bonds](#) are financial tools designed to finance social or environmental outcomes. They typically involve an investor, a funder and a service provider. The investor provides finance for the service provider to deliver specified outcomes. If successful, the funder repays this finance plus returns to the investor.

Scaling Private Finance in the Blue Economy

Playing catch-up

There has been a rapid growth in green finance over the last decade. It is hoped that blue finance can mimic or even better this trajectory by adapting similar mechanisms already in place for green finance. The first hurdle is getting blue bonds off the ground at a time when investible blue projects are harder to find.

“The biggest challenge – or opportunity – is the ability to find enough blue bond issuers to mimic the growth we have seen in the green bond market. At this point of time, what you see is that the scope of use-of-proceeds or eligible project categories that would classify for blue bond issuance are narrower than that of green bonds, which makes that universe a bit smaller. [It is] a bit harder to find those opportunities or those issuers that are willing to consider blue bonds.”

An additional challenge is navigating the uncertainty of a nascent area of finance. Uncertainty gives rise to differing views across stakeholders on how to shape and develop blue bond markets. However, with collaboration and guidance we are already emerging from this uncertainty. New guidelines by the [IFC](#) and [ICMA](#) (The International Capital Market Association) have been helpful in clarifying how to structure blue bonds and which projects are eligible for them. We are now seeing new milestones in blue bonds, such as [DP World](#) issuing the first blue bond in the Middle East. This is a \$100 million USD transaction that channels finance to sustainable transportation, port development, conservation and pollution prevention. For Willem, these developments are the crystallisation of collaboration and growing confidence in the market.

“This is to me like a cherry on the cake where you can see everything coming together and finally heading up to a buy-in from the sector and getting money flowing into a much-needed area.”

Greater volume and variety

As momentum grows, Willem foresees an increase in the volume of blue finance products being issued and the diversity of sectors engaging with blue finance.

“I have been involved in maybe 60 to 70 engagements with issuers over the last twelve months and I would say that for the next 12 months we could see, in the emerging markets only, 1 to 2 billion [USD] of blue issuance coming along. And the beauty of this is that it’s not all concentrated in sectors you could naturally expect blue bonds to come from, such as water utilities, but it’s much more diverse. We see interest from financials, port companies, chemical companies... so there is a lot of opportunity.”

This points to exciting times ahead for blue bonds. When we consider developed markets as well, we can expect to see even greater growth in the volume of transactions over the next couple of years. The hope is that with this momentum, spearheaded by innovations such as the Blue Economy Bond Strategy, we can start to see blue finance follow green finance into the mainstream of capital markets.

Innovation in Insurance: De-Risking the Blue Economy

Sarah Conway, a leader in ecosystem resilience at and climate finance, highlights how parametric insurance instruments can enhance the resilience of marine ecosystems and support blue economy stakeholders facing up to the uncertainties of a changing climate.

Parametric insurance differs from traditional forms of insurance. It provides payouts based on the occurrence of a pre-defined and measurable “triggering event”, such as hurricane wind speeds exceeding a certain threshold. This leads to a much quicker and simpler payout than other forms of insurance, because the payout is pre-agreed and triggered as soon as these measurable parameters are met. The payout is typically linked to the severity or proximity of the threat, reflecting the level of response needed. This can extend to a range of environmental issues, from ocean acidification to marine heatwaves.

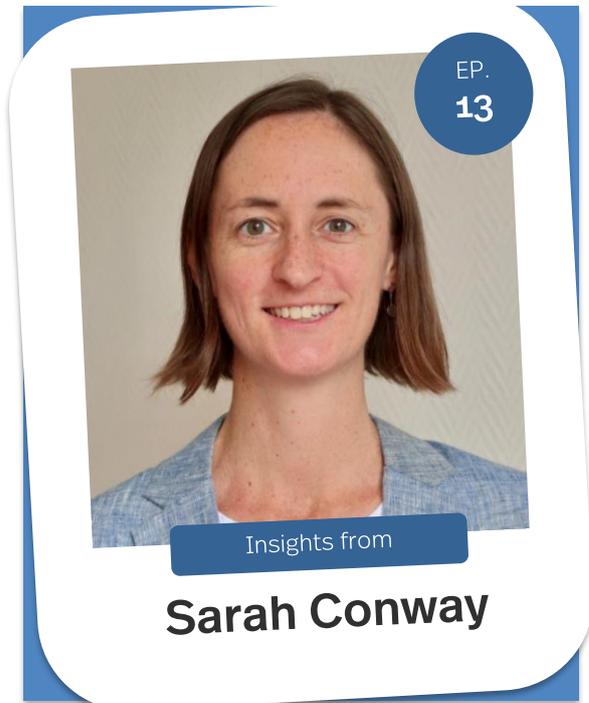
There are three broad categories of parametric insurance that are relevant to the blue economy: those that support ecosystems, those that support specific sectors, and those that de-risk other forms of finance.

Supporting ecosystems

The first category of parametric insurance is insurance products designed to directly support ecosystems that underpin the blue economy, such as key blue carbon habitats like coral reefs.

A specific example is provided by the [Reef Rescue Initiative](#) coordinated by the Mesoamerican Reef Fund (MAR Fund). This uses parametric insurance to fund community-led reef response in ten sites across 1000 km of the Mesoamerican Reef.

“So if a hurricane exceeds a specific wind speed threshold... a payout is made to the MAR Fund, usually within weeks of an event, who then directs



it to the local partners in the impacted site. The reef guardians, who have been trained and have a response protocol in hand, are then able to very quickly get in the water, start conducting damage assessments, helping to facilitate reef recovery, clearing debris, reattaching corals and helping the ecosystem [to] bounce back to its pre-event state as best as it could.”

The rapid payout that parametric insurance enables is vital because coral reef response is more successful when deployed within weeks of the trigger event.

“In the absence of that immediate liquidity, it is unclear if these types of interventions would take place. And while the ecosystems are usually pretty resilient and responsive, it can often take a decade or more for coral reef ecosystems to recover in the absence of that immediate support that this type of structure provides.”

Innovation in Insurance: De-Risking the Blue Economy

Supporting sectors

Parametric insurance can also support the businesses or livelihoods that depend on marine ecosystems, such as the fishing sector. Due to changes caused by climate change, unpredictable weather conditions can restrict the access to fishing grounds for long periods. This impacts livelihoods and local food security. In the Philippines, [parametric insurance has been used to mitigate this risk of lost income and to incentivise more sustainable fishing practices.](#)

“The problem can be exacerbated because fishers are trying to catch as much as they can when they can access the grounds which creates a cycle of unsustainable fishing... We have designed a parametric insurance product to help small-scale fishers in the Philippines specifically to adapt to climate change by providing protection from lost income incurred because of bad weather days which prevent them from safely fishing.”

The product is triggered by weather measurements over a 5-day period relative to historical records and is expected to support at least 15,000 fishers.

Resilience wrappers

The third category is products that de-risk investments into the blue economy. Referred to as “Resilience Wrappers”, these insurance products protect debt instruments from climate related risk and increase their creditworthiness.

In late 2020, Belize was grappling with unsustainable debt levels, the aftermath of a hurricane, and a Covid-19 pandemic. A [debt for nature swap, facilitated by The Nature Conservancy](#), allowed Belize to repurchase a quarter of its national debt at a 45% discount in exchange for commitments to marine conservation. The savings achieved in this refinancing were then available for conservation funding.

Belize remains vulnerable to natural disasters, but the servicing of its remaining debt is safeguarded against this risk by a [parametric insurance policy](#). In the event of a hurricane that meets agreed thresholds, the next

debt repayment by the Government of Belize would now be covered by an insurance pay-out, allowing Belize to focus resources on the immediate disaster response.

“The outcome of this particular debt conversion was pretty amazing... It allowed Standard & Poor’s to increase Belize’s sovereign credit rating by three steps from CC to B-. It also allowed that direct debt reduction and reduction of the cost of capital.... It enabled Belize to commit pretty significant financial resources to marine conservation and provided comfort to the bond investors against post-disaster default of debt payments.”

Risk transfer versus risk reduction

Parametric insurance can transfer the financial risk of climate change away from vulnerable stakeholders. However, this does not reduce the need for risk reduction. For the sustainable blue economy, that means taking measures to increase the resilience of marine ecosystems to environmental shocks. Insurance costs are set to increase as our climate warms further, so boosting this natural resilience is necessary for maintaining the access and affordability of insurance.

“As we get closer to that level of warming, the question of insurability more broadly becomes increasingly uncertain. So, in other words, natural capital [such as] mangroves to minimise storm surges and flooding for example, may be the only sustainable means to limit future climate losses and damages that would result in a disruption to insurance markets.”

Our discussion with Sarah shed light on the intersection of finance, conservation and sustainable development within the blue economy. Innovative insurance products have an important role to play in reducing the impact of environmental change on those most affected, as well as incentivising sustainable practices. In the meantime, protecting marine natural capital assets remains essential to mitigating the impact of these threats on livelihoods and the blue economy.

7. [Debt instruments](#) are assets used by governments, institutions and individuals to raise financial capital or generate investment income.

Blue Returns: Financing the Future of Marine Conservation

Nicolas Pascal is executive director and co-founder of Blue Alliance. Blue Alliance work with governments to manage large Marine Protected Areas (MPAs) in a way that regenerates marine ecosystems while supporting local communities. In effect, this tackles the finance gap for marine conservation by creating sustainable businesses associated with MPAs. His expertise brings together experience from the finance world with a PhD in marine ecology. Nicolas joined the podcast to explain the challenges of creating self-sustaining and economically viable MPAs.

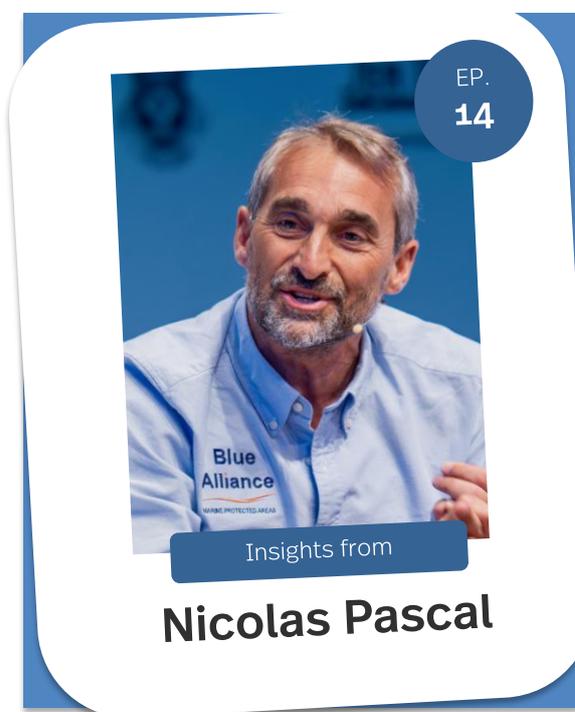
Transforming paper parks

The work of Blue Alliance addresses the finance gap for marine conservation and the issue of “paper parks”. There are over 20,000 MPAs worldwide, but the large majority of these are not effectively managed. In many cases, this comes down to a lack of resources and capacity amid a melee of competing issues that need managing.

“What we have realised is that in many countries, developed or developing countries, [the] government is overwhelmed with many other agendas and [in] most cases don't have enough resources to properly manage these MPAs or Protected Areas.”

The solution begins with governments agreeing to delegate the management of a large MPA (more than hundreds of thousands of hectares) to Blue Alliance. For each MPA, Blue Alliance sets up a non-profit entity which involves local communities and relevant authorities to manage the area. The next step is to create livelihoods and “reef-positive businesses” in the area that support the conservation.

“We have now a clear vision of what we can do with this MPA. Our approach here is twofold. We are doing conservation... and we are doing a blue economy development around the protected area. This is where we are different from many other approaches, in that we don't dissociate both.”



We don't dissociate conservation to a blue economy development for the local communities. We cannot tell them to stop fishing or reducing fishing if we don't also create livelihoods around it.”

In Nicolas' own words, the approach aims to use “business for good”.

Conservation through a blue economy

Managing an MPA requires financial resources and community buy-in. A local sustainable blue economy can achieve both. Blue Alliance has created a business division that develops their own profitable entities around the MPAs in community-based aquaculture, sustainable fisheries and blue carbon credits. Each entity needs to be financially sustainable while supporting local communities and reducing coral reef impacts.

Blue Returns: Financing the Future of Marine Conservation

“The banks were not interested in doing a small transaction into one SME.... They wanted us to have an aggregating facility. So, where they can put their money into one entity and this entity will be in charge of doing all the small due diligence and transaction costs to reinvest into these [smaller] entities.”

For some investors, the sustainable blue economy and the MPA regions may be uncharted territories. Being able to measure and report on their impact is essential to attracting investors and building confidence.

“So far it is working. Even in the first years we can see some improvements in the water, we can see some clear jobs are being created... and we can report it. So that’s quite positive. That’s why I think these two main actors [UBS Optimus Foundation and BNP Paribas] have been convinced by the approach.”

Scaling up

After a successful first cohort of investments in the blue economy around these MPAs, the momentum continues to build with the aim to protect 3% of the world’s coral reefs and help local communities. As the investment grows, so do the possibilities for scaling up reef-positive businesses.

“For example, in aquaculture we started with an investment of \$2 million USD in [a] sea cucumber community-based hatchery, in the second cohort we can upscale this hatchery to a bigger one with a better technology, reducing even more the impacts on the environment and upscaling it with a number of community farmers we can implicate”.

Upscaling brings its own challenges, but Blue Alliance sticks to principles of a tangible business approach that delivers community-based impact

and returns. The first round of investments is already helping to build confidence amongst investors. It is hoped that the second round could attract exponentially more private finance.

“The second one will have its own challenges, but we are upscaling which should not take so much difficulty to convince more investors to come. They will see the quality of the existing anchor investors and that will help convincing the others to come.”

Showing what is possible

The mission set out by Nicolas and Blue Alliance is to help the planet “one Large Marine Protected Area at a time”. The work offers a real-world, replicable case study of what is possible through blue finance and the sustainable blue economy. We can hope that this offers a glimpse into a better future where sustainable blue economies deliver prosperity and resilience for coastal communities by serving the ecosystems that support them.

Markets for a Nature-Positive Economy

Ralph Chami is a distinguished financial economist with a rich background in climate change and biodiversity loss. After 25 years at the International Monetary Fund, Ralph has shifted his focus towards addressing two key threats to humanity: climate change and biodiversity loss. As co-founder of Blue Green Future and Rebalance Earth, Ralph now works towards developing frameworks for valuing natural capital. The aim is to create markets for nature that can shape an equitable and nature-positive economy. Our interview with Ralph looked beyond theory alone to explore real world possibilities for natural capital.

Developing nature markets

It was an encounter with a blue whale, the “greatest and the largest animal that ever lived”, that set Ralph on a new path to developing nature markets.

“I learned from the scientists that the great whales are great allies in the fight against climate change...I learned from them that the whales helped to capture carbon and sequester [tremendous amounts of] carbon. That started me on this research to understand that it’s not only trees, but that fauna plays a key role and captures carbon directly and indirectly...I learned [that] living nature is a great ally in the fight against climate change.”

As a financial economist, Ralph recognised that there is a market price for carbon which could be applied to this important sequestration service. Research began to value the services of great whales, followed by elephants and then ecosystems such as seagrass and saltmarsh.

It is important to remember that this is not a valuation of the whale itself. We cannot price the priceless. However, it can capture some of the measurable services that a whale provides in an economic context. Historically, whale populations have been decimated as they were hunted for economically valuable resources like blubber and oil. Ralph’s idea is to create markets for living nature, using the economic system to support rather than exploit species.



“All of it is really about the role of the living nature in the current economic system which, up until then I would say, was invisible.”

National wealth from natural assets

Creating markets for living nature could have a transformational impact for countries like the Bahamas which is home to the world’s largest known seagrass ecosystem. Research (assisted by tiger sharks) estimates that there are up to 92,000 km² of seagrass there. Seagrass grows both horizontally and vertically and it is believed that there is potential for a further 40,000 km² of growth in the area. Seagrass meadows are the heavyweights of marine natural capital. They sequester more carbon per hectare than a tropical rainforest and at a faster rate. They are also vital hotspots for biodiversity. Through natural capital markets, the value of this living ecosystem to the Bahamas could be transformative.

“I can tell you this – potentially the Bahamas could be sitting on between \$150-170 billion [USD] just in carbon sequestration alone given the additionality of the 40,000 [additional hectares] identified in the science.”

Markets for a Nature-Positive Economy

This may be a conservative estimate. Seagrasses provide an array of vital services that could be measured and valued. When you look beyond carbon, the value of the seagrass rockets further.

“Remember, when you protect the seagrass, it’s not just carbon. When you have healthy seagrass, you have healthy fish stock. So, we can calculate the delta of the fish stock. When you have healthy seagrass, you’re staving off flooding and we know the value of flood control. All of these can be priced in the market. Also, when you have healthy seagrass, it has a knock-on effect on coral reefs, so we can calculate the delta on that one too. So, when you put all of that together, the numbers are definitely north of \$170 billion.”

Three principles

Our current market system values extractive nature – but with the value of living nature coming online – markets can deliver “regenerative” returns to investors.

Ralph talks about three principles for this new market:

- First, the asset owners – the government and local communities – should never sell their natural assets. The assets – mangroves, seagrass, saltmarsh, forests – are the source of wealth the country owns and which deliver valuable services to the global economy.
- Second – the money that is invested needs to look after those assets in perpetuity. Only then will the services from the assets continue to yield returns to investors. Services include carbon sequestration but also other regulating services such as water filtration, soil formation, nutrient cycling, coastal protection and more.
- And third, the money that is invested needs to go to look after the stewards of nature – the indigenous people and local communities. Only by ensuring income and well-being for those looking after nature will these new markets succeed.

Win-win-win

Ralph refers to a “win-win-win” presented by this concept. First and foremost, nature benefits through the protection and increased resilience of ecosystems. The investment and environmental improvement would benefit communities in multiple ways: employment, food security, poverty alleviation, and increased climate resilience. The final win is for investors.

“My colleagues on the demand side are basically investing in an asset whose price is only going to increase because climate change is not subject to business cycles. The demand for the technology to fight climate change is only going to increase in the eleventh hour.”

The clock is ticking in the fight against climate change and biodiversity loss. Logically the vital services provided by living nature will only grow in value as demand rises. Beyond this, creating financial markets that value healthy ecosystems over depleted ones could help to shift our global economy to a more sustainable and regenerative system.

5.



A Call to Action

Inspired by what we have learned over the series, the Marine Conservation Society and Simmons & Simmons have compiled the following lessons learned and recommendations for advancing a sustainable blue economy.

Call to Action

Break the cycle

1 Change the narrative

We, and the expert contributors to the podcast series, have found that trade-offs do not need to be made between environmental protection and economic progress. Challenging this narrative is important to protect the economic and financial value at risk linked to ocean health. The insights of our experts have also demonstrated a wealth of opportunity to be found in the sustainable blue economy. In the long term, these opportunities are win-wins, and speak to the interests of local communities, financiers and governments.

We call on politicians, business leaders and investors to challenge narratives that environmental protections inhibit economic growth, by highlighting the existing future environmental, social and economic potential of sustainable blue economy opportunities.

2 Change course

We need to build a blue economy around maintaining and enhancing marine natural capital today, so we, and future generations, can enjoy the benefits of a healthy ocean in perpetuity. As the environment inevitably changes, those that fare best are the societies, economies and investors that are best prepared. For example, ocean-based solutions can safeguard our coastal communities, economies and infrastructure from inevitable environmental change.

Lay the enabling conditions

3 Remove the threats

Tackling threats to our ocean is within our control. Addressing the fundamental threats to ocean health will work wonders for our ecological and economic security.

To begin, we urge the UK Government to ban forever chemicals from all consumer products, introduce a Marine Spatial Prioritisation Plan to balance the range of demands and objectives placed on the sea and which specifically promotes nature-based solutions that deliver valuable ecosystem services.

Industry and investors must identify and manage threats across their operations and portfolios. Removing these threats will protect financial value at risk and create the ecological conditions needed to support marine industries.

4 Integrate the ocean into biodiversity & climate plans

Progress has been made already on biodiversity and climate strategies at governmental and corporate levels. However, very few of these strategies include the ocean.

To be meaningful and effective, it is essential that biodiversity and climate strategies and policies are improved to account for ocean impacts. At the same time, we should look to leverage existing progress in green finance to accelerate progress on blue finance.

5 Blue Economy Strategy

The role of governments in establishing a thriving blue economy cannot be overstated. A dedicated Blue Economy strategy set out by government can set the direction for travel by defining the roles of relevant stakeholders and the desired outcomes and provide certainty to businesses and financiers.

The objective of this strategy should be to deliver equitable social and economic benefits through the regeneration of marine and coastal ecosystems. This is not limited to national governments: local governments and councils can also lead from the front with their own blue economy initiatives.

The UK Government needs to create a national blue economy strategy, with join-up between Scotland and Wales' blue economy plans to provide certainty and clarity for investors, businesses and communities.

6 Community engagement is essential

Coastal communities are ultimately the stewards of the marine environment and local buy-in is essential if restoration and conservation efforts are to succeed. A condition for sustainability is equity, meaning that local communities must be beneficiaries of the benefits that a sustainable blue economy delivers. The rights and knowledge of indigenous communities, who have lived in harmony with the natural world for millennia, must be integrated into decisions affecting the marine environment.

The UK Government needs to work with coastal communities to embed local marine knowledge into emerging sustainable blue economy projects, and to develop a joint understanding of the unique needs and requirements of sustainable blue economies within each community.

Call to Action

Accelerate progress

7 Collaborate

Using our collective expertise can drive progress much faster. This means sharing knowledge and solutions in nascent areas like blue finance. In marine governance, this may require delegation to those who have the necessary capacity and expertise to lead progress. To aid collaboration, it is better to use simple language that is understood across sectors.

We encourage financial stakeholders to call upon the conservation sector to advise on where finance can be applied most effectively.

8 Pricing the priceless

Tapping into the large capital markets will be a game changer for financing the blue economy. To do this, there needs to be healthy supply of projects to invest in. Blended finance is an important tool to scale-up and de-risk projects sufficiently to make them financially viable to private investors. It is public spending that is needed to put the enabling conditions in place, and private finance can take the blue economy to the next level.

We urge the UK government to provide a policy landscape that is conducive to growing a robust nature market. We also urge the finance sector to scale financial instruments such as blue bonds to create large funding streams for supporting the growth of the sustainable blue economy.

9 Ocean-focused innovation

Innovation will be essential to delivering the sustainable blue economy at pace and scale. Whether through novel materials that reduce marine pollution - such as seaweed-based packaging like Notpla - or technologies that improve ocean monitoring and marine spatial planning, product- and tech-based solutions can unlock real impact.

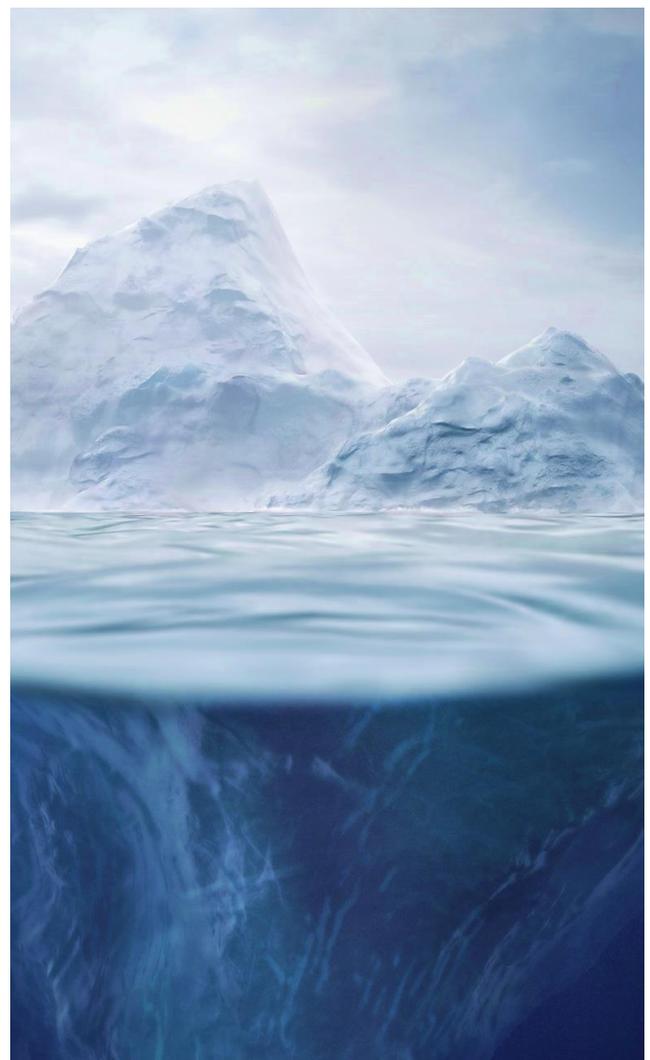
We call on government and industry to support ocean-focused innovation through targeted funding, public-private collaboration, and fast-tracking solutions that deliver measurable environmental and economic benefits.

10 Seize the opportunities

The sustainable blue economy approach has not been done yet at scale. Governments, industries and financial institutions have an opportunity to be pioneers in this: to show what is possible.

Clear communication can help to get buy-in across the different communities and sectors. This means explaining why ocean health is important, what can be done to support it, and showcasing the benefits it will deliver. This is an opportunity to show leadership in pursuit of positive change.

We call on governments, industries and financial institutions to show bravery, leadership and work collaboratively to deliver a dynamic sustainable blue economic system with ocean regeneration at its core.



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