



Planet oceans — tides are changing

ESG voices podcast series

Musical intro

Announcer:

Hello and welcome to another episode of ESG voices! This podcast series addresses the opportunities and challenges within ESG, through interviews with ESG specialists from KPMG and beyond. Throughout this series, we will discuss a broad range of environmental, social and governance issues, aiming to support governments, businesses, and communities in creating an equitable and prosperous future.

The ocean is a vital ally in this existential venture. Blue carbon ecosystems (BCEs) — which include mangroves, tidal and salt marshes, seagrasses as well as open ocean food webs and nutrient cycles — have enormous capacity to store carbon within the plants, animal biomass and in the sediments below for long periods of time. BCEs are an essential part of the global drive to counter climate change, protect biodiversity and enhance livelihoods by capturing carbon and keeping ocean and freshwater systems healthy and productive to help ensure sustainable future.

For today's episode I am joined by Josh Hasdell, Global Blue Economy Team Lead, KPMG in Canada, Christoph Harwood, Director of Policy, Simply Blue Group and Carolin Leeshaa, Natural Capital and Biodiversity Global Lead, KPMG International who will be discussing the importance of the blue economy, the impact organizations have on the ocean and how supporting the blue economy is essential to meeting decarbonization goals. A fitting topic for discussion this week, given World Oceans Day is fast approaching on 8 June.

Today we are honored to be joined by Christoph from the Simply Blue Group, Christoph before we dive into today's conversation, could you perhaps introduce yourself and your organization to our listeners?

Christoph:

Simply Blue are blue economy project developers. We worked with the oceans to help address climate change. That means we develop renewable energy projects working with the oceans primarily the focus is on floating offshore wind. But in the energy side we are also developing wave energy projects in technology who had been in developed for a number of years, but we think time is coming close. We also develop aquaculture projects, our first one being salmon farms, which use low impact following systems.

But we are also very interested in going beyond that and working with the oceans in other ways, either using the energy we capture from the oceans to create things like electronic fuels or by working offshore with agriculture within the wind farms themselves.

Announcer:

Excellent, thank you Christoph! Josh to set the scene for today's topic, could you please describe how the oceans work and why this is such an important topic?

Since the Industrial Revolution, humans have admitted more than 2000 Giga tons of carbon dioxide and put that in perspective, one giga ton is a billion metric tons of CO₂. So, 2000 Giga tons had been put into the into the atmosphere. Now with the most ambitious project projections, there is going to be a difficulty to meet certain one and a half degree targets set by the Paris Agreement. So simply reducing emissions just won't be enough. And the world will have to remove nearly 1000 Giga tons of carbon by the end of this century. Now, one of the main ways that we're starting to see this is through ocean systems now, although it may be perceived as less developed commercially than land-based alternatives, ocean-based carbon removal or even ocean systems and removal strategies have enormous potential. So, the oceans contain nearly 39,000 Giga tons of carbon, so the equivalent about 50 times the amount in the atmosphere, and it's estimated that the oceans have already captured about 38 percent of the emissions caused by humans over the last two centuries. And with its area and its depth, its virtually limitless capacity to store carbon especially when we start to look at the bottom of the ocean, and the potential for natural deep sea carbon storage as well. Now more than just the carbon sequestration potential. The ocean is also vital to our wellbeing and likely that it regulates climate and provides energy captured carbon, it disseminates the essential elements of living matter. So, ocean circulation is also influenced globally. By the polar processes and redistributes carbon across long distances and great depths. The ocean moves heat and carbon from warm surface waters towards cooler waters in the deeper layers, winds bring cold water up from the deep layers in some regions, allowing for that carbon exchange between the deep ocean and the atmosphere, which is the powerhouse behind biological production and the foundational elements of our food and ecosystem webs as well.

Announcer:

Thanks for the setting the scene for us today, Josh. So now let's discuss what nature-based solutions are and their importance to the blue carbon ecosystems. Carolin, could we start with you?

Carolin:

Nature based solutions hold the great potential to holistically address the interlinked challenges of inclusive social and economic development, regeneration of nature and climate mitigation. Multiple institutions like the IUCN, the OECD, and even the European Commissions have defined nature-based solutions in multiple ways. But the perspectives are framed slightly differently, but all of them highlight the multiplier effect and point to their distinct role to conserve, restore and improve natural ecosystems to capture carbon, enhanced biodiversity and improve human and societal wellbeing and livelihoods by managing nature in appropriate ways. And initially, nature-based solutions were based almost exclusively on green or land-based carbon ecosystems. But over the past years, we've really seen an increased appreciation of the value of blue carbon ecosystems and those blue carbon ecosystems include seagrass meadows, mangrove forests, tidal marshes, and potentially even seaweed beds and besides them solving for multiple challenges. These blue carbon ecosystems are very important to the world because they hold enormous capacity to store carbon within the plants and in the sediments below ground for very long periods of time. Some scientific estimates even suggest that blue carbon ecosystems could capture 3 percent of the world's carbon per year, and this is an equivalent to the entire emissions from landfill and wastewater. On the other hand, however, when these blue carbon ecosystems are disrupted, they could potentially also release carbon which makes it even more important to conserve and restore them.

Announcer:

Josh, any thoughts from you?

Josh:

So, nature-based solutions, aim to conserve, restore and improve natural ecosystems by one focusing on carbon capture, natural carbon capture, it enhances biodiversity. And it also helps people and protect livelihoods as well as the environment. And when we talk about blue carbon ecosystems, we're focusing very much on ocean based or freshwater based ecosystems and these benefits include over and above, just carbon sequestration, but also healthy seafood stocks. It helps with flooding protection and erosion protection, freshwater access, as well as the regulation of global temperatures, meaning there are a myriad of benefits that need to be acknowledged alongside the benefits of carbon sequestration when we look at blue carbon ecosystems as part of the nature-based conversation.

Announcer:

And Christoph, would you add anything to Josh's comments?

Christoph:

Yeah, I think the word that gives away is the ecosystem is that you're talking about a system where there's multiple activities going on. And so, if you can improve on one part

of the system, you can often impact the other part of the system. So, whether you're working to catch a carbon through seagrass, or salt marshes, not only do you get that benefit of taking carbon out, but you also help restore and enhance the habitat. I mean, we don't just see it within carbon sequestration, you can also see it in things like building and designing and developing offshore wind farms, where you can create zones of habitat improvement, ecosystem improvement, and see the return of ocean-based wildlife to those systems.

Announcer:

And Josh?

Blue carbon ecosystems are usually centered or focused at only impacting coastal and temperate communities or island nations. And I think what's starting to come into more in the forefront is that blue carbon ecosystems may be centered in certain geographies, but they're present throughout the world, and actually have impacts for a wide variety of different countries and jurisdictions that are not necessarily coastal based. And I think that's one of the biggest things that we're starting to, to see coming out of the science but then also coming out of the projects that are being invested is that this is a this is a project or an ecosystem that the world benefits from always affected by rather than just small, temperate island nations. And I think that's, that's becoming a really important part of how we're seeing organizations and governments starting to interact with nature-based solutions, as well as the blue carbon or blue ecosystems as well.

Announcer:

Josh, how can blue carbon ecosystems support organizations climate initiatives?

So, when we look at organizations, if we're looking at corporates, if we're looking at institutions, investment houses, you name it, there's a lot of climate strategies being developed. And a lot of that is being focused on terrestrial or green solutions, and ecosystems, if it's from forestry work, if it's from regenerations, on terrestrial land, but one of the things that isn't being focused on at the same level is this blue carbon ecosystems. And actually, this is the time when where the science is really shown that there is a lot of benefits to investing in blue carbon projects and blue carbon ecosystems, not only from the amount of carbon that can be sequestered to aid net zero or climate pledges, but also in the biodiversity aspects and the ecosystem benefits. So, if we're talking about mangrove forests, and the flooding, erosion protection that their roots have on top of the carbon storage that they provide, if we're looking at seaweed beds and the carbon fixing that can occur within these intertidal areas. There's a lot of ecosystem benefits that need to be focused on, not just environmentally, but also socially the livelihoods that are protected both from a tourism point of view, but also from a fishing point of view. And also, from it can also start to lead to shipping and seafarers' livelihoods as well. So, the role that these blue carbon ecosystems have in these climate strategies is to complement their existing carbon commitments, but then also to try and build a nature positive way of driving change within their either their corporate strategies, but then also through environmental and social strategies that they're developing as well.

Announcer:

Christoph, would you add anything?

Christoph:

From a viewpoint of organization that sees itself working with the oceans to address climate change in the blue economy, and the people we recruit the people who join us come from a background where they like working with the sea, they love the sea they love, they've been brought up often, living next to the sea. And so, anything that we can do as an organization that enhances biodiversity and supports ecosystem recovery, is one of those things that people just get a kick out of from being in the company. And I think, you know, organizations looking at, at how to work with the oceans find that the sea has this opportunity to do so much more than just focusing on another area. Yes, you know, we got to take CO₂ out of the atmosphere, or stop it going in in the first place. But at the same time, you know, there's a lot more we can do just by being there and doing the right things.

Announcer:

And Carolin, do you have any thoughts you would like to add?

Carolin:

So, as the world struggles to meet net zero by 2050 an ever-growing number of businesses must pursue rapid decarbonization. To date carbon offsets have been largely focused on terrestrial sources or through carbon capture, utilization and storage, technology advances. However, the finite supply of land based offset sources is likely to push up prices and benefit larger and more expensive blue carbon removal projects, particularly in the medium term. If we think about it, the world needs to remove an estimated 10 Giga tons of CO₂ per year by 2050. But the tightening standards and also higher environmental integrity has created uncertainty over the supply of the carbon credits that fund many carbon capture projects. To illustrate this point, the Taskforce on Scaling Voluntary Carbon markets has indicated that the practical supply of carbon credits could be as low as one to five Giga tons of CO₂ per year by 2030 because of the associated mobilization challenges, so what this means is because of their high volume of carbon capture potential, natural climate solutions, like blue carbon things could offer a transitional and complimentary step to achieve net zero. They're growing in popularity and are poised to become an increasingly attractive option for countering emissions. When compared to technological carbon removal options, such as direct air capture, geological capture, or even biochar production, those natural climate solutions like BCE's are potentially more cost effective and scalable.

Announcer:

How have you seen organizations incorporating blue aspects into their corporate and climate strategies?

Carolin:

Interest in blue carbon has reached an all-time high, but high-quality projects remain scarce and are yet to be deployed at large scale. So, we're not seeing organizations climate strategies going deep blue just yet. But there are certainly some inspiring initiatives of how corporates are starting to engage in this space and our building the

supply of high-quality projects. Take for example, CSIRO, Australia's national science agency, which has partnered with an ASX listed corporate in the mining sector, on a 30-month program to measure and quantify the net emission reduction potential of Australia's mangroves, sea grasses and tidal marshes and estimates the carbon abatement potential of blue carbon methods that could be implemented through Australia's Emissions Reduction Fund. This partnership will also develop the science to underpin ways of quantifying the additional benefits that accrue to fisheries biodiversity and coastal risk reduction. Another great global example is the blue carbon challenge. That's an initiative aiming to increase the supply of high-quality projects, which is supported by large corporates in the technology and asset management sector, including also conservation NGOs and research organizations. We've also seen the launch of the world's largest blue carbon project, Delta blue carbon, its engaging in large scale mangrove planting of over 350,000 hectares of tidal river channels and creeks on the southeast coast of Sindh in Pakistan. This is an ecologically significant area which had previously suffered from significant deforestation. This Delta blue carbon project is a pioneering public-private partnership between the government of Sindh and a private project developer. The Delta blue carbon project will operate over a 60-year lifespan and aims to generate over 128 million blue carbon credits. It has already attracted significant corporate investors.

Announcer:

And Josh, any thoughts?

Josh:

So, this has been on a bit of maturity curve, this how organizations have been interacting with the blue economy, it first started, kind of when we were looking at kind of CSR initiatives when it was volunteering when it was focusing on local donations and kind of community efforts, a big drive had been around beach cleans and kind of reducing plastic pollution, which is a vital part of protecting the blue carbon and blue ecosystems as a whole. But now we're starting to see a bit of an evolution of how organizations are interacting with the blue economy, especially as it becomes much more endemic in general understanding of what these ecosystems are. The first we started to see it from a blue carbon point. And we've seen organizations with large net zero commitments and therefore offsetting requirements in the short term, starting to invest in some startup organizations that are looking at new technologies, if we're talking about deep sea carbon storage and seabed storage. But if we're looking at other elements around ocean fertilization, in ocean alkalinity, there's a lot of new concepts being developed, that organizations are starting to invest in to try and test the, the technology there and the actual impact of those projects. But then kind of moving up the investment kind of readiness curves, we're looking coastal mangrove forests, seagrass meadows, seaweed beds, that kind of thing. Those are the ones that are starting attract a bit more investment, just because of the readiness and the proven ness of the carbon sequestration and the wider ecosystem benefits. Now, they are still relatively small on a scale compared to the terrestrial side. And that's just reflective of the maturity of how these products have been getting attention from the corporate and the investment world. But that is kind of accelerating. And

if we're looking at carbon credits, and the value of those carbon credits, there is a premium being put on these blue carbon credits as well. So, there is a potential for a reasonable corporate return on investment on investing in these blue carbon ecosystems, when we start looking at the credit value being sold on either the voluntary market or even on the on the certified market as well. So, at the moment, we've been seeing it mainly as a carbon offsetting strategy, but now it's becoming more of a nature positive strategy, because the benefits are, are almost endless.

Announcer:

Christoph?

Christoph:

I think, you know, the question is, I just think about incorporating blue aspects into corporate and climate strategies. Because we are, if you like, that's all we do. We work with the with the blue economy, we work with the oceans. And we came across an interesting report the other day, by the high-level panel for sustainable ocean economy, who basically looked at the role that oceans can play in addressing climate change and hitting that 1.5-degree target. And just over 20 percent, of the heavy lifting has to come from the oceans. If we don't work with the ocean, we will not solve climate change. So, it's very important role to play. And what that report does is break it down into five areas. One is clearly renewables offshore wind wave tidal. Second thing is, is the decarbonization of ocean-based transport. So that's getting fuels into ships that don't belch out CO₂, so it might be ammonia or methanol, or hydrogen. The third area is around coastal and marine ecosystems and the benefit they deliver. But that also does include seaweed farming, within that that calculation. Fourthly, is about really dark ships getting people off red meat onto white fish. And that is includes aquaculture. And finally, there is the other part of carbon sequestration, which is the storage below the sea into saline aquifers, or into basalt, or into depleted oil fields. And all those add up to that 21 percent. So, coming across as report, I was able to look at those five elements ago, actually, we're doing a bit of that a bit of that bit of everything, we are trying to pull on those levers, whether it is the renewables, whether it is aquaculture, whether it is looking at ocean-based transport fuels and carbon sequestration, there's a lot to be done, there's a lot that the ocean can deliver, to address climate change. And the benefits that come out of that, as we were saying earlier, is not just the CO₂, but it's also reviving the ocean so that it can survive as a working ecosystem.

Josh:

You brought up a good point there as well is around that blue energy that's how we're seeing organizations interacting with the blue economy as well over and above some of these ecosystem and carbon storage is also energy generation, blue energy generation, offshore capabilities, or if it's actually using the oceans energy and the oceans power to generate energy for our home use as well. And I think that's all sort of becoming a huge point, as well, when we talk about our energy transition and the commitments that certain jurisdictions have been making around the energy transition, I think that we're starting to see a lot of corporates and even energy providers investing heavily in the blue economy from an energy perspective.

Announcer:

Josh, how can organizations and governments utilize blue carbon ecosystems or incentivize adoptions of blue carbon ecosystems as part of a net zero or nature positive strategy?

Josh:

So, I think there were three ways that we can see organization and even governments and public policy, incentivize blue carbon ecosystem adoptions from a climate perspective. The first one is including ocean-based restoration and protection projects in corporate climate and offset strategies. This is going to drive growth and viability in these ecosystem projects. And it's going to show that there is a strong commitment to enhancing not just terrestrial green project and carbon projects, but also through blue economy ecosystem projects as well. The second is around developing a compliance standards for blue carbon ecosystems to standardize the measurement and the reporting, this again, will in turn channel investment into ecosystems from the private sector, because they're able to validate the commercial returns on either a voluntary carbon market or even the kind of compliance carbon market as well. And then finally, I think one of the big ones that I think countries, or jurisdictions can do, is putting blue carbon ecosystems into their public policies to ensure that ocean is a carbon renewable option. And one of the ways is part of their nationally determined contributions, and actually pledging as a country, that part of their commitment to the Paris Agreement is to produce carbon removal or carbon offset or even carbon capture technologies through blue carbon ecosystems. And again, this will drive that nature positive approach across multiple avenues for both the private and the public sector.

Announcer:

Christoph, your thoughts?

Christoph:

Yeah, I suppose reflecting as a project developer developing a blue economy ecosystem project is, in essence, probably no different to some of the other stuff we do. So, you have to find the right site, the right technical solution, you have to get all the permissions or the all the licenses that needs government support to make sure that it doesn't take 10 years to get a license, you have to get the project to be investable, you have to therefore get all the right data and information. And then you have to raise funds to actually carry out the work. But then once you've raised the funds, you then clearly have to deliver. Now in raising the funds, you need confidence that there is a market for the people who invest in the projects. And for that, we go back Josh to what you were talking to about certification, about the availability of carbon credits and things like that. But you won't get project developers coming in. If there is an uncertainty on the marketplace, on where it is, and I think one of the best things the government can do is to create certainty or future revenues in order that people then come in upfront and take the development risk and push through projects. I think the other thing is to be ambitious and to get to scale. If you look at a lot of the ecosystem projects, there was a number which worked very well for NGOs and community groups. And those are you know, locally. Well, so worth doing. It's great for community to recover

their foreshores and get seagrasses back in and marshes. But if we had to have a carbon impact in this, we need to think how to get to scale and to get to scale because all the upfront costs will need to be covered for a commercial operation. It will take people time, cost resources to get these things done, and therefore what we need to think about making sure that again, going back to the licensing regime, the market is there to cope with extremely large-scale projects, and they will have a real impact.

Josh:

I think that certification point is going to be a pivotal point to be able to help justify that investment, because you can then start to see the commercial returns if we just focus purely on a profit and loss point of view. That's what that's what will help. And I think, and that's not to say nothing's being done at the moment, there's actually quite a bit I've seen moving towards, towards incorporating blue economy, blue carbon ecosystems, kind of, in these, in these methodologies we're looking at, we've seen how wetlands and coastal areas are starting to be incorporated as part of some carbon protocols and some verified standards, which is great. We're starting to take the learnings from the forestry practices, and starting to embed them into the uncertainty in the intertidal at the most at the initial part, but soon to be kind of the kind of wider ocean basins. But then we're also starting to see that coming into the voluntary carbon markets methodologies as discussions around how blue aspects can go in there. So it is, it is moving in the right direction, but there's always you know, we can always wish it goes quicker, and it's it can go faster. So, I think it requires, as always does with the climate strategies, a partnership between governments helping incentivize it and verify it as part of public policy and standards as well as the private sector, driving it kind of from an investment point of view.

Announcer:

Carolyn, would you add anything?

Carolyn:

Although the added benefits of BCE's may be largely accepted awareness of BCE's still lags behind terrestrial carbon capture methods. Busy so established a strong track record of acceptable return on investment, both in terms of selling credits and capturing suitable volumes of carbon. Understandably, investors are pursuing due diligence to evaluate project feasibility, and there is a pressing need to quantify and verify their effectiveness. The complexity of the wider ecosystem benefits also makes it harder to quantify success and make meaningful comparisons across sectors and geographies. One way to incentivize greater adoption of BCE's is to stimulate voluntary carbon markets to channel investment into ocean-based projects and to drive BCE's project grows through establishing carbon standards to improve measurement and reporting. Such a move can really help propel BCE's into the mainstream and will be particularly valuable for emerging nations with substantial ocean footprints, such as small island states, like Madagascar and also the Pacific Islands, which have lengthy coastlines and or shallow shelves that could support extensive blue carbon habitats. Another avenue is to integrate BCE's into public policy to place the ocean at the center of larger carbon removal and nature positive

strategies and integrate them into legislated carbon reduction targets.

Announcer:

To wrap up our conversation today, and based on your experience so far can I ask each of you to pass on some advice on today's topics to the listeners?

Christoph:

I think it's really worth thinking about is how much people love the oceans. If you think of the success of the blue planet, people who don't necessarily work with the sea or live near the sea, everybody loves the seas, in my experience I think you can access that as an organization on many different levels. It can be getting involved with small blue economy projects, supporting NGOs or supporting community groups. But I think it also comes and I've sort of mentioned this before is about thinking about how to get projects to scale to get scaled, have a strong impact, and to really tip the balance on ecosystems that are struggling. And I think thinking in an organization about the blue economy, just, I would say grasp it and get people excited about it, it won't be difficult, and then choose where your comfort level is, and choose where you can go into. And I'd really encourage people to think about how to work with the ocean on a number of different levels. I mean, it can be just about having fun, but it can also be about doing a lot of good. And you know there are companies like ourselves who are really saying, we have to work with the oceans. We have to make these things happen, because we've got some big challenges for the rest of the century to restore and recover all the damage that we've done to date.

Announcer:

Josh, any thoughts from you?

Josh:

So one of the first things around this and I think this can go for any individual listening to this depending on what from what perspective you bring, there's a bit of an education journey that we all need to go on. There's a lot of great work done by scientists and researchers in this space that are starting to bring a lot of the blue economy related benefits to the kind of mainstream. So, the first thing is really understand and give yourself a bit of a get some time to understand what we mean by the blue economy, what is included in that, and then looking at what some of the requirements are to help promote them protect and restore certain ecosystems. And there's a lot of there's a lot of information out there. And that can be done more over and above what has been focused on at the moment in the mainstream, if we're talking about beach cleans and plastics pollution, and minimizing why that is a hugely important aspect of, of protection and restoration. There is a lot more that goes alongside those kinds of activities. And then leading that into kind of an organizational action. It's now starting to think about you if you have a climate pledge, if you have a climate strategy, if you have an ESG ambition is starting to now have a think around like what elements of this can I start incorporating to have a kind of a blue tint a blue focus, too, if it's from how we're sourcing energy, if it's how you're investing in climate technologies, or if it's an offset, or if it's in scenario planning, or if it's in just logistics and transportation and kind of how you

how you connect your organization around different jurisdictions, I think there is always an aspect that you can start integrating blue into. And there's a lot of reports that KPMG have put out, there's a lot of reports kind of out in the market as well, that can help identify what type of engagement your organization can have within the blue economy, regardless if you're coastal or not. And the final thing to say is we talked a lot about the ocean on this podcast, blue economy also includes freshwater habitat, water conservation access, as well. So, it's not just thinking about ocean basins, it's also thinking about everything to do with water access I think that's a good thing to keep in mind when approaching this topic.

Announcer:

And finally, Carolin:

Carolin:

If the world is to meet climate, nature and land degradation targets and achieve the UN Sustainable Development Goals, we really need to look at all available options.

Let's not forget that meeting climate goals is not just about eliminating carbon emissions. There are wider environmental objectives like biodiversity, and important social objectives like climate justice for local and indigenous communities to consider. Whilst there are certainly a number of adoption barriers yet to overcome natural climate solutions hold great potential to solve for these more holistic outcomes.

Announcer:

Josh, Christoph and Carolin, thanks for taking the time to speak with me today, you've given our listeners a lot to think about and we look forward to hearing more about the many topics discussed today in future podcasts. Join us again next time for more insights from ESG leaders and innovators. You can also find our latest insights covering a range of ESG topics by visiting kpmg.com/ESG.

Thanks for listening!

Musical exit

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