Financing the Blue Economy

Financing the Blue Economy: Strategies for Blue Investing

The Blue Planet Effect: 88% of people in the UK who watched the BBC's documentary - the most watched show in 2017 - subsequently changed their behaviour[1]. But it wasn't just in the UK, globally we paused and reflected on what we have done to our planet, specifically our oceans, the lifeblood of all life on Earth. The resultant backlash on single use plastic around the world is testimony to the power of documentary filmmaking in highlighting the issues associated with unstainable growth in our world. But are our problems really as simple as phasing out straws and plastic bags? Or are they deeper, more systemic? What is the Blue Economy and how does it tackle the issues presented in Blue Planet I and II? In this paper, we aim to unpack what the Blue Economy is, and how you can create investing strategies that deliver positive impact to our oceans.

WHAT DO WE NEED TO KNOW ABOUT THE OCEANS?

The two defining characteristics of oceans are their scale and fragility. They make up **72% of the planet's surface** and **97% of its water**.

In terms of our diet, the seas are a major source of protein. Over 1 billion people globally rely on seafood as their primary source of protein[2]. In total, we consume an estimated 160 million metric tons of seafood annually, half of which is caught in the ocean[3]. Some 30 million fishers across 200 countries carry on time-honoured traditions of putting boats to water, casting nets, drifting lines, and setting traps to feed the world in the first stage of the estimated $900 billion seafood supply chain from hook to plate[4].

Compared to other sources of animal protein, seafood is seen as the healthiest option with the lowest carbon footprint. It is 10 times more efficient than beef and 3.5 times more efficient than chicken, respectively, in terms of CO2 emissions[5].

But the oceans provide much more than just food. Globally, the Organisation for Economic Co-operation and Development (OECD) estimates that oceans contribute over $1.5 trillion dollars in value add to the global economy[6]. This is a conservative estimate and includes oil and gas exploration which accounts for roughly a third of this.

According to World Wide Fund for Nature (WWF)[7], the oceans are the world's 7th largest economy[8]. Yet 64% of the oceans are in areas beyond national jurisdictions (what we call the 'high seas') and only 4% are in official 'protected' zones. It's easy to understand how the oceans have become just another vast economic area, ripe for harvesting, with little policy control over its development.

SO WHAT IS THE BLUE ECONOMY?

The Blue Economy is the "**sustainable use of ocean resources for economic growth, improved livelihoods and jobs, and ocean ecosystem health**"[9]. The Blue Economy encompasses many activities, including fisheries, aquaculture, maritime transportation, waste management, tourism, climate change mitigation and adaptation, and renewable energy. It does not include oil and gas exploration.

Fisheries and Aquaculture: Marine fisheries contribute more than $270 billion annually to GDP[10].

Maritime Transportation: Over 80% of internationally traded goods are transported

1 Waitrose Food & Drink Report 2018-19
2 Food and Agriculture Organization of the United Nations, "The State of World Fisheries and Aquaculture," Rome, 2014
3 ibid
4 ibid
5 Weber et al., "Food-Miles and the Relative Climate Impacts of Food Choices in the United States," Environment Science & Technology 42(10), 2008.
6 read.oecd-ilibrary.org/economics/the-ocean-economy-in-2030_9789264251724-en#page15
7 WWF, 2015 Reviving the Ocean Economy – the case for action.
8 World Bank and IMF, 2016
9 World Bank, 2017
10 ibid

by sea with the volume expected to double by 2030 and quadruple by 2050[11].

Tourism: in the US alone tourism and recreation account for 72% of the ocean economy's total employment and 31% of its GDP[12].

Climate Change Mitigation: coastal protection via conservation of mangroves, tidal marshes and seagrass meadows found on every continent except Antarctica.

Renewable Energy: offshore wind and tidal energy. According to a report by Zion Market Research, the global offshore wind energy market size was valued at USD 20.3 billion in 2016 and is expected to reach USD 57.2 billion in 2022[13].

WHAT ARE THE CHALLENGES FACING OUR OCEANS?

If we continue on the same trajectory, by 2050 there will be more plastic in the ocean than fish[14]. Some current estimates suggest we're already past that tipping point. Ocean dead zones with zero oxygen to support life have quadrupled in size since 1950[15] (much of this being attributed to land-based agriculture and chemical run off from fertilisers and pesticides). Ocean fish stocks have depleted by over 50% since 1970[16], the biological diversity of the oceans has slumped by 39% between 1970 and 2010. Half of the world's corals and nearly a third of its seagrasses have disappeared in the same time[17].

Oceans sequester and absorb a third of the carbon emitted by human activity, roughly two billion metric tons each year. 'Blue carbon' (what is referred to as the carbon sequestered by oceans) equates to roughly 83% of the global carbon cycle (human activity and natural resource) at any one time being circulated through our oceans[18]. While coastal habitats cover less than 2% of the total ocean area, they account for approximately half of the total carbon sequestered in ocean sediments.

Given this, and the fact that over 3.5 billion people depend on the ocean for their primary source of food and in 20 years, this number could double to 7 billion[19], it is clear that the oceans play a critical but increasingly endangered role in our lives.

WHAT ARE THE SOLUTIONS?

Like many of the environmental challenges we face, solutions to some already exist and many, thankfully, are being adopted. The introduction and adaption of technologies over the last decade or so have created some exciting investment opportunities as these solutions are deployed. Some of these include:

Fisheries and Aquaculture: Growing international competition has led to overfishing and a decline in fish stocks. Climate change is compounding the problem, along with the mounting problem of waste flow into our oceans, particularly plastics and microplastics. A third of world fisheries are now overexploited - up from just 10% in 1975 - and 60% are fully exploited[20].

If we look at the Japanese fishing industry and the recent research from Planet Tracker "Perfect Storm: Profits at Risk in the Japanese Seafood Industry", we can see the extent of the economic fallout from overfishing. From 1985-2017 Japanese seafood production fell by 66%, from 12.8 million to 4.3 million tonnes (including 1 million tonnes of aquaculture fish[21]). In the same period, its share of global seafood production fell by 85%, from 13.4% to 2.2%[22]. This downward trend is projected to continue to 2025[23].

In an effort to protect and restore global fisheries, an estimated $1.1 billion in philanthropic funding over the past 5 years has supported advances in fishery policy, community stewardship, science, sustainable certification strategies, and consumer awareness campaigns[24]. This growing global movement of advocacy for marine conservation and sustainable fishing has laid a strong foundation for fishery restoration and has proven that well-managed fisheries can recover. So we know how to help fisheries recover, but we need more capital to fix them faster, to allow the ocean to continue to feed us in the future. So, what are some of the solutions?

- investments in truly sustainable fishing (across the supply chain from micro enterprises to mainstream listed fisheries);
- advancements in alternative protein feedstocks in fisheries (for example the move to insect based protein feed);
- the use of naturally occurring 'antimicrobials' (rather than human manufactured antibiotics) in fisheries;
- land based aquaculture (and the potential for recirculation aquaculture system (RAS) technology); and
- innovations in laboratory grown fish meat and plant based fish alternatives as an alternative source of fish for human consumption.

11 ibid
12 National Oceanic and Atmospheric Administration (NOAA)
13 "Offshore Wind Energy Market (By Foundation Type: Monopile, Jacket, Tripod, and Floating; and By Water Depth: Shallow Water and Deep Water): Global Industry Perspective, Comprehensive Analysis, and Forecast, 2016 – 2022"
14 Ellen MacArthur Foundation, WEF, The New Plastics Economy 2016
15 Science, January 2018
16 WWF Reviving the Ocean Economy – the case for action, 2015
17 WWF Reviving the Ocean Economy – the case for action, 2015
18 Blue Carbon Initiative, 2019
19 read.oecd-ilibrary.org/economics/the-ocean-economy-in-2030_9789264251724-en#page15
20 FAO 2018
21 Japan Ministry of Agriculture & Fisheries, 2019
22 Toshio, Katsukawa, Building a future for Japan's Fisheries Industry, February 2019
23 Toshio, Katsukawa, Tokyo University of Marine Science & Technology, February 2019
24 Encourage Capital "Investing for Sustainable Global Fisheries", 2015

A note of caution must be sounded here on open water pen-based aquaculture and the growing issues of fish waste and excess feed causing rapid algae growth that in turn pollutes the water surrounding aquaculture pens. This pollution causes eutrophication creating oxygen-deprived dead zones. It is also important to note here that farming of any living species increases exposure to possible breaches of animal welfare and rights which in turn requires enhanced due diligence.

Maritime Transportation: In 2015 it was estimated that 75.6 trillion tonne-kilometres of goods were transported worldwide by sea freight. Over 90 percent of world trade is carried across the world's oceans by around 90,000 marine vessels burning nearly 2bn barrels of the heaviest fuel oil (bunker fuel)[25]. Maritime shipping contributes between 2 - 3 percent of the world's total greenhouse gas emissions[26].

From the start of this year (2020) new regulations came into force, specifically focusing on sulphur within shipping. Shipping fuel contains sulphur concentrations more than 3,500 times greater than diesel. Bunker fuel is also in line for new regulatory activity with arctic countries and the International Maritime Organization planning to start phasing out its use in 2024 due to concerns about spill risks and the air pollution that comes with its use. The sulphur cap is part of a broader framework adopted by the IMO to drive the industry's greenhouse gas emissions down by at least 50 percent by 2050 compared with 2008[27]. It is a framework that the IMO has spent years championing.

Acoustic pollution is a hidden problem of maritime transportation - the constant noise from shipping interferes with marine life, especially those sea dwelling species that rely on sonar and echo location for communication and hunting (e.g. dolphins and whales). During the Covid-19 crisis one experiment using data from hydrophones set up on the seafloor near the shipping channels off Vancouver Island and in the deep ocean showed a significant noise reduction. The ambient noise level measured dropped by 4 to 5 decibels in the Strait of Georgia during the first three months of 2020, about half the acoustic power compared to a year prior[28].

So, what solutions are there to the polluting and invasive nature of maritime transportation?

1. **The move to cleaner sources of fuel**
   Deep sea cargo ships typically burn the heavy, residual oil left over after gasoline, diesel and other light hydrocarbons are extracted from crude oil during the refining process. This 'bunker fuel' is much dirtier than normal fuel.
2. **The move to electrified transportation**
   In 2017 China launched the world's first electric cargo ship with a range of 50 miles and charge time of 2 hours. Unfortunately, the ship is destined to transport coal[29].
3. **The decentralisation of production and franchise model**
   Removing the dependency for large scale centralised production and moving to localised models of production in country/continent thus removing the need for long distance travel by sea.

Tourism: Eco-tourism is designed to engage tourists in low impact, non-consumptive and locally-oriented environments in order to maintain species and habitat. From being a niche offering, it's now becoming part and parcel of a tour operator's license to operate in certain areas. In 2018 Maya Bay on Ko Phi Phi Leh island (made famous in the film, The Beach) closed as a direct result of overcrowding and excessive tourism. The bay was receiving up to 5,000 tourists and 200 boats a day. It has been estimated that more than 80% of the coral around Maya Bay had been destroyed as a result of litter, boats, footfall and sunscreen. It is likely that long term changes will follow regarding how particular localities are managed that may favour eco-tourism operators signing up to strict conditions of engagement.

There are also restrictions and innovations happening with sunscreen. In 2018, Hawaii was the first state in the US to ban the sale of sunscreen containing certain chemicals. These chemicals are thought to make coral more susceptible to bleaching and stunt the growth of baby corals. Once in the water, sunscreen pollution can affect reefs up to 5km away.

With the rise in legislation designed to protect our oceans from the effects of over tourism, companies are having to think fast regarding the intersect between human consumption and ocean health.

Climate Change Mitigation: Mangrove plantations and artificial and eco-sensitive reef and lagoon installations all play a role in the fight to mitigate climate change and repair the damage to these ecosystems that has occurred. Mangroves, apart from enhancing carbon sequestration, also reduce the damage from tidal surges. The goods and services that mangroves provide to people and planet alike are conservatively estimated to be worth $186 million each year[30]. These costs include the beneficial role that mangroves play in the fight against rising sea levels and coastal erosion. However, mangroves are under threat from aquaculture, agriculture, coastal development and unsustainable tourism. Thailand has lost 84 percent of its

25 eu.oceano.org, 2020
26 www.ft.com/content/642b6b62-70ab-11e9-bf5c-6eeb837566c5
27 International Maritime Organisation
28 asa.scitation.org/doi/full/10.1121/10.0001271
29 China Daily, 2017
30 WWF

mangroves, while the Ivory Coast, Guinea-Bissau, Tanzania, Mexico, Panama, Malaysia, Myanmar, Pakistan, and the Philippines have each lost more than 60 percent of their mangrove forests[31]. Coral reefs are estimated to provide close to $30 billion each year in goods and services[32] including their role in eco-tourism. However, much like mangroves, corals are also under threat. A warming climate and ensuing ocean acidification are one of the biggest threats, along with coastal development and unsustainable levels of tourism We are now witnessing coral restoration programmes in Australia and the Caribbean as scientists and conservations partner to better understand and stimulate the recovery of our global reef systems.

Renewable Energy: offshore wind and tidal energy systems are seen as critical in our ability to deliver clean energy globally. Wind is at the forefront of this, with costs associated with construction rapidly falling. The costs of developing wind farms on the UK coast have fallen by 50%[33]. Europe now has a total installed offshore wind capacity of 18,499 MW. This corresponds to 4,543 grid-connected wind turbines across 11 countries[34]. The largest offshore wind farm globally is in UK waters. Globally, the offshore wind sector employed in 2016 1.1 million people[35].

SO HOW DO YOU BLUE INVEST?

Unlike other impact-specific strategies, Blue Investing is still a relatively recent phenomenon and doesn't come with the track record of other impact investment solutions.

There are managers who have been active though in this area. One of the early pioneers in this space was the Dutch manager, Aqua Spark. Launched in 2013 it focuses on aquaculture and invests in small to medium enterprises working towards the production of safe, accessible aquatic life in an ecologically sensitive way. Others have followed, for example, Althelia who focuses on investments in marine and coastal enterprises through real assets and management improvements across the aquaculture, supply chain, fisheries and other coastal projects. In 2009, the world's first listed sustainable fisheries fund, the Bonafide Global Fish Fund was launched. 2018 saw the launch of the world's first Blue Bond. The Republic of Seychelles launched the bond to support sustainable marine and fisheries projects.

Whilst the market is beginning to move, this is still a very new thematic lens for investors which will increase the amount of work an investor or wealth manager needs to do ahead of investing to identify a) what they're trying to solve for and b) where they go to solve it. With fewer funds available to invest in, an investor will have to identify those businesses at the forefront of the delivery of their vision for change.

WHICH INVESTMENT STRATEGY SHOULD I USE?

The starting point to any investment strategy is to identify what you want to achieve. This is a big question for anyone, whether you're a seasoned impact investor or not. As with our other impact-specific strategies, we advocate a three stepped approach to Blue Investing:

1 IDENTIFY YOUR BELIEFS AND VALUES

Start with what you believe in. One way to do this is to begin with your values, then work backwards. At Tribe we use the UN's Sustainable Development Goals (SDGs) as a compass to map all the issues our clients care about and then help them prioritise them. We do this via our ImpactDNA™ process. The SDGs also help our clients articulate their values from the codified framework of global values embedded within the Goals themselves. From this you'll find your VISION OF CHANGE: a high-level narrative that reflects your values as a future world.

Mapping your beliefs and your values in this way gives a strong foundation upon which to build your deeper THEORY OF CHANGE: what that future world will look like and the steps needed to get you there.

2 UNDERSTAND THE SYSTEM

Blue Investing is an extremely interdependent strategy, reliant on many different moving parts to create a clear and compelling investment approach. It requires you to think about all the interrelated components: "systems thinking". Whilst immediately being evident in **Goal 14:** Life Below Water, it also significantly embraces **Goal 1:** No Poverty, **Goal 2:** Zero Hunger, **Goal 6:** Clean Water & Sanitation, **Goal 7:** Clean & Affordable Energy; **Goal 8:** Decent Work & Economic Growth, **Goal 9:** Industry Innovation and Infrastructure, **Goal 12:** Responsible Consumption and Production, **Goal 13:** Climate Action, **Goal 15:** Life on Land and **Goal 16:** Peace Justice and Strong Institutions.

3 PLANNING YOUR IMPACT AND DELIVERY

Now that we have a vision and theory of change, you can work out how you want to deliver it. This will include what types of business and investment opportunities are appropriate, and what form impact will take: macro scale or more localised change; tight definitions of impact evidence or less formal observations, etc.

31 American Museum of Natural History, 2020
32 ibid
33 FT 2018
34 Wind Europe, OFFSHORE WIND IN EUROPE, Key trends and statistics 2018
35 IRENA's "Renewable Energy and Jobs – Annual Review 2016"

In order to work out what types of opportunities you're interested in, we'd suggest looking at three levels of activity a business can have:

- First, how it supports the Blue Economy and your vision through its CORE OPERATIONS (how 'ocean friendly' is it in terms of practices across the business - supply chain management, health safety and environment (HSE) practices, community engagement, etc);
- Second, how it delivers the change you want to see through its CORE PRODUCTS AND SERVICES (how is ocean health factored into the product research & development and delivery, what is the current product / service menu and how ocean friendly is it); and
- Third, how it affects and mobilises change through ADVOCACY AND INFLUENCE (does it, through public policy advocacy and/or marketing and communication, promote change as it relates to the issues you care about, can it mobilise consumer sentiment to drive change etc).

TAKING THE STRATEGY TO THE MARKETS

Let's use fishing as an example. Over the next 35 years, food security economists project that we will need to increase seafood supplies for human consumption by 70%, driven by population growth and economic development[36]. Yet according to data from the UN, 58% of the world's fisheries are classified as "fully fished". Only 8.5% of global landings (catches of marine fish landed in foreign or domestic ports) are from fisheries that are certified as sustainable[37], whilst 40% of fisheries are considered to be overexploited or collapsed[38]. The oceans are clearly in crisis. But seafood, whether caught from the wild or from aquaculture, can recover and continue to be part of the food 'mix', if we can develop a sustainable financial model that promotes the responsible stewardship of the open seas.

As we drive towards a future where food security and the carbon footprint of food becomes part and parcel of our decision making, focusing an investment strategy on those businesses at the forefront of driving us towards low carbon, sustainable and eco sensitive food security is essential.

When looking at publicly listed companies, it is important to understand where issues are most prevalent. Looking at everything from consumer food retailers, global pharmaceutical, offshore energy providers (both clean tech and fossil fuel), agriculture, through to listed fisheries. Our due diligence would be in part facilitated by the ground-breaking work Fish Tracker completed in 2018. They identified stock exchange listed companies generating revenues from fishing, aquaculture and seafood processing related activity, and tried to establish whether those companies have or are breaching environmental limits as outlined previously. Their findings show that 58% of fisheries cannot increase their catches sustainably[39]. The report found 218 listed companies, with a market capitalisation of $520 billion, yet only 17% provide sufficient information for investors and wealth managers to understand sourcing and product mix (see the 5 points of action below). Only 22 (10%) of the companies in our universe could be considered to have a sustainability policy. Given this, we have an initial view of some listed fisheries we may want to investigate further.

We might want to look further into the value chain before we choose to make an investment: where does their unsustainable fish end up? Who's buying it? Who's selling it? Where? And to whom? We then start to look at consumer food retailers, identifying who is potentially part of the problem and who is part of the solution. Who is also championing the rights of the ocean through consumer education awareness raising and behaviour change?

As investors/wealth managers, we need to be fully aware of all the risks we face if we are investing through the lens of sustainable aquaculture. In Planet Tracker's report[40] on Japanese fisheries, referred to earlier, they have identified five areas that investors/wealth managers need to be mindful of whilst conducting due diligence. These are:

1. **Industry accounting standards** Currently, they provide no mechanism to value wild-catch seafood asset values on company profit and loss forecasts or balance sheets. Accurate valuation of these companies, therefore, becomes difficult in the absence of this information.
2. **Traceability of fish catches** Public and independently validated data on the source of the seafood companies sell - how much fish of each type is caught, when and where - is limited. This makes traceability of the catch hard.
3. **Transparency of operations** Lack of supply chain transparency and performance disclosure by seafood companies makes it impossible for investors to link company revenue figures with fisheries that are over-fished or at risk of overexploitation. In other words, provenance of the fish is unclear, and like traceability, it results in a lack of assurance as to where the catch originated.
4. **Opaque subsidiaries** Planet Tracker found 2,900 subsidiaries associated with the 41 listed companies it assessed. Investors/wealth managers have no visibility of these subsidiaries' operations, liabilities and performance and it is difficult to determine which operate in the seafood industry.
5. **Industry inefficiencies** Mismanagement of global fisheries has seen widespread biomass reduced below the maximum sustainable yields which inevitably leads to higher access and extraction costs.

36 "Sustainable Fisheries Financing Strategies," EKO Asset Management Partners, March 2014
37 Source: Marine Stewardship Council Certification, mscglobalservices.com, 2015
38 Pauly et al., "What Catch Data Can Tell Us About the Status of Global Fisheries," Sea Around Us Project, 2012
39 Fish Tracker, 2018
40 planet-tracker.org/sustainable-fishing-can-reverse-decline-of-japans-seafood-industry-maximise-profits-and-reduce-financial-and-reputational-risk-for-investors/

It becomes clear from working through a fisheries example that investing through the lens of the Blue Economy requires thoughtful consideration and a clear and thoroughly investigated investment strategy. It is why Blue Investing doesn't lend itself perfectly to passively managed strategies given the complexities of issues at play.

CONCLUSION

Identifying your Blue Investment strategy and populating it with investment opportunities is a reductive process centred on:

- asking the right questions,
- understanding your tolerance for impact trade off,
- having a clear timetable for investing and/or divesting,
- knowing how and where you want to engage, and
- constantly ensuring the feedback loop of information is working to help you refine and target your investments for impact and financial performance.

It is a multi-layered process and requires careful consideration. The example we worked through above provides some idea as to the level of due diligence and systems thinking that one may have to deploy to create a strategy that delivers the types of solutions we need as a global community.

As an investment community we require examples of successes as well as failures, so that the market can better understand what works and what doesn't, and prioritises flows of capital to where it is most needed. With such an exciting emergent thematic paradigm, open source innovation and data sharing will continue to be increasingly important as we move towards a vision of a sustainable future with healthy oceans.

As we emerge from the Covid-19 crisis, and adjust to a new normal, our oceans will take centre stage again as blue economy industries start to increase activity and production. As with our entire ecosystem, the calls for a green recovery have been loud and clear and as we build back better, we also need a blue recovery. Through careful and considerate investing, we can all add shades of blue to how we invest.