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Marketing Material

Blue economy: A new twist in an old tragedy

Markets and policymakers are finally waking up to the challenges and opportunities of protecting marine ecosystems, while simultaneously promoting sustainable development.

- For too long, the world's oceans have been overexploited, due in part to what economists call the tragedy of the commons.
- Building consensus for tackling some of the thorniest planetary problems takes time, but we may be reaching a tipping point.
- The comparative lack of "blue investment" so far may create interesting possibilities for investors willing to use their capital and influence for positive change.

It sounds like small fish. Back in 2017, the Seychelles put the finishing touches to a marine conservation scheme nicknamed "debt relief for dolphins."[1] Soon thereafter the archipelago "launched the world's first sovereign blue bond – a pioneering financial instrument designed to support sustainable marine and fisheries projects" under the proud auspices of the World Bank.[2] The sums involved? Less than 40 million dollars for both deals combined. They nevertheless highlight why such schemes are likely to catch on, as well as some of the difficulties involved.

Oceans are essential for keeping the planet livable – indeed, it seems a little odd that we call it "earth," rather than, say "ocean."[3] Conserving the oceans, seas and marine resources, while using them more carefully for sustainable development, would mark quite a sea change, though. "Although the world's oceans are vital for our planet, we are ruthlessly attacking them with global warming, overfishing, plastic and water pollution. If we continue to deal with them in this way, almost 50 percent of all living things in the oceans could disappear by 2100," warns Paul Buchwitz, fund manager at DWS with a long-running focus on United Nations Sustainable Development Goals (SDG).

Why is it so hard to get sustainable development right when it comes to fishing and the oceans more broadly? One obvious problem is quite well illustrated and documented by much of the world's fisheries policies. In the past, policies and regional fishing bodies have been prone to capture by special interest groups. All too often, as The Economist once put it, "The sharks are in charge of the fish farm."[4] One potentially encouraging trend is the growth of market demand from consumers and some consumer-goods companies and fishing companies for sustainably labelled fish products. In 2019-20, 17.4% of all wild marine catch was engaged with the international non-profit Marine Stewardship Council (MSC). In total, there were 18,735 different MSC labelled products on shelves around the world.[5]

1 https://www.economist.com/middle-east-and-africa/2017/09/07/a-new-plan-to-protect-the-water-around-the-seychelles
2 https://www.worldbank.org/en/news/press-release/2018/10/29/seychelles-launches-worlds-first-sovereign-blue-bond
3 https://quoteinvestigator.com/2017/01/25/water-planet/
4 https://www.economist.com/leaders/2014/02/22/the-tragedy-of-the-high-sea
5 https://www.msc.org/about-the-msc/reports-and-brochures

The Seychelles examples provide another reason. The new schemes only work because of the archipelago's vast exclusive economic zone. Under international law, these give sovereign states special rights on the use – and regulation – of marine resources over a distance of 200 nautical miles (370 km) from the coastal baseline, i.e. much further into sea than the territorial waters (which end at 12 nautical miles (22 km) from the coastal baseline. Where such zones overlap, it is up to states to work together – so the Seychelles situation of only one state being involved, not to mention strongly incentivized due to the economic importance of its tourism sector, is quite unusual.

Beyond 200 nautical miles from coastal states, another problem lurks in its hardest to tackle form: what economists call the tragedy of the commons. The high seas belong to everyone, and thus nobody feels responsible for maintaining it for the future, let alone future generations. As Garrett Hardin, the American ecologist wrote in the 1968 article that coined the term: "Maritime nations still respond automatically to the shibboleth of the 'freedom of the seas.' Professing to believe in the 'inexhaustible resources of the oceans,' they bring species after species of fish and whales closer to extinction."[6] Hardin's key point was that overuse of a common resource is not merely a technical problem, but more fundamentally one of flawed incentives. For example, one way which sometimes works quite well in avoiding overfishing has been the creation of tradeable fishing permits or quotas.[7] Such approaches presuppose, however, that a governance system already exists – with one state or a few of them able to regulate and monitor behavior.

National or even regional schemes are of limited help to alleviate two other manifestations of the tragedy of the commons: pollution generally, and acidification of the oceans, as a result of carbon dioxide (CO_2) emissions specifically. Roughly 30% of human-made CO_2 is absorbed by the oceans, which fundamentally changes the chemistry of seawater and can destabilize ecologically important ecosystems such as coral reefs.[8] For countries such as the Seychelles, which are heavily exposed to climate change due to rising sea levels, acidification provides a strong additional reason to push for global changes. But it has few means to do so on its own.

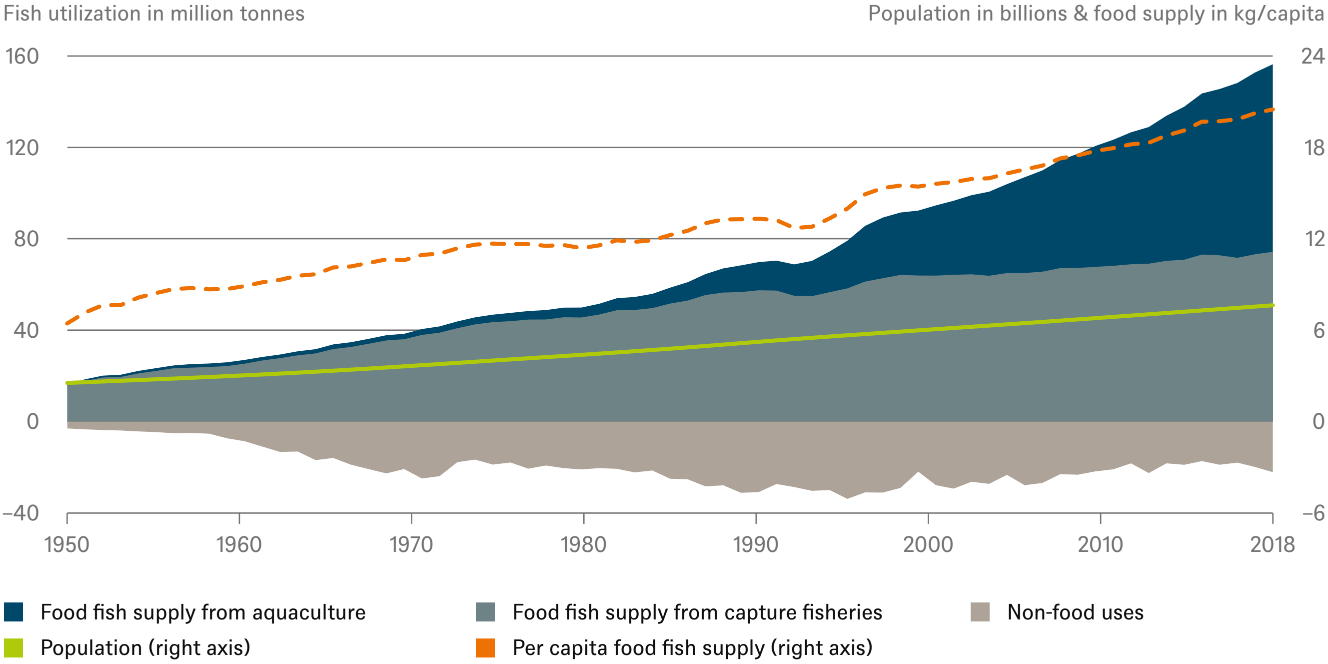
Since Hardin's days, a lot of work has been done on how to avoid a tragedy of the commons, notably by Elinor Ostrom, the winner of the 2009 Nobel prize for economics. Refreshingly, Ostrom generally took the approach of looking at what resource arrangement works in practice, to figure out why they might work in theory. In general, her recommendations involve defining who is – and who is not – entitled to use a common resource pool and having straightforward mechanisms to resolve conflicts. That typically means giving everyone with a stake in the governance system a say in running it.[9] Building consensus for such a system takes time, but may eventually reach a tipping point.[10]

In the case of climate change – arguably the biggest tragedy of the commons the world has ever seen – that tipping point may be getting closer, if it has not been reached already. That has helped boost interest in sustainable development in general, which may help tackle some of the old problems long besetting the oceans, too. "Increasingly, we notice that the focus of politics and investors is slowly moving towards protecting marine ecosystems," notes Paul Buchwitz.

Maritime shipping, for example, plays an outsized role in global CO_2 emissions, which will need to fall sharply to meet the Paris Climate Agreement goals. Previous transitions such as the move from sailing vessels to steamships in the 19th century suggest a fairly long timeline for new technologies to mature, as well as the important role of finance, both as investment capital and insurance services for enabling innovation.[11] Seafood, and in particular recirculating aquaculture systems are another area where there is a lot of innovation, not least in sustainable feeding methods (such as insects, algae and bacteria). Already, land-based aquaculture accounts for a sizeable and growing share of the world's fish supplies (see chart), but more progress will be needed to make it sustainable.

6 https://science.sciencemag.org/content/162/3859/1243
7 https://www.economist.com/leaders/2008/09/18/economies-of-scales; https://www.economist.com/science-and-technology/2008/09/18/a-rising-tide; https://www.economist.com/special-report/2009/01/03/an-icelandic-success
8 https://www.noaa.gov/education/resource-collections/ocean-coasts/ocean-acidification
9 Ostrom, Elinor (1990). Governing the Commons: The Evolution of Institutions for Collective Action. Cambridge University Press. ISBN 978-0-521-40599-7.
10 Jagers, S.C., Harring, N., Löfgren, Å. et al. On the preconditions for large-scale collective action. Ambio 49, 1282–1296 (2020). https://doi.org/10.1007/s13280-019-01284-w
11 https://www.woi.economist.com/wp-content/uploads/2020/11/AcceleratingEnergyInnovationfortheBlueEconomy.pdf

WORLD FISH UTILIZATION AND SUPPLY



Source: United Nations FAO annual yearbook 2018 (latest available). http://www.fao.org/fishery/statistics/global-consumption/en

In other areas, too, the transition between fostering sustainable development on land and at sea is fluid. Biodegradable plastics, for example, would be of great help in reducing pollution in both. Over the past decade or so, offshore wind has made great strides in boosting renewable energy production and innovative approaches are in the works to generate electricity from sea currents and tides. Clearly, there is no lack of potential business opportunities and challenges innovative companies are trying to address.

In our view, blue finance currently offers some of the highest-impact opportunities in both financial and environmental terms. The Seychelles' schemes well illustrate some of the reasons why. With its 115 mostly tiny granite and coral islands, the Seychelles cover a land area of just 455 km^2 – roughly the size of the city of Vienna. The archipelago is spread across an exclusive economic zone of approximately 1.4 million km^2 of the Indian Ocean. In return for lower interest on its debt under the first scheme, the Seychelles pledged to dedicate about 400 000 km^2 as maritime reserves – larger than the land area of Germany or Japan. In about half of the new marine protected areas, fishing and mining will be prohibited altogether. Limited economic activities will be permitted in the other half of the protected areas.[12]

Getting this far was not easy. Hammering out the financial details took several years. In part, this is because the "blue bonds" the Seychelles sought to finance better marine management try to address instances of market failure – when the potential benefits are long-term and uncertain while the costs are immediate.[13] Structuring such transactions in ways that make sense to private debt holders is not straightforward. Nor is monitoring compliance – think of the administrative difficulties just on the part of government agencies of overseeing such vast protective areas, as well as educating and compensating local communities where necessary.

In several respects, the Seychelles are also unusual in ways that facilitate the transition. For one thing, much of the country's

[12]https://news.mongabay.com/2020/03/seychelles-extends-protection-to-marine-area-twice-the-size-of-great-britain/e
[13]https://planet-tracker.org/blue-bonds-could-finance-a-fish-stock-recovery-says-planet-tracker/

economy nowadays depends on tourism, as do – directly and indirectly – many of the jobs of its roughly 100,000 inhabitants. Tourism has been the main source of economic growth in the last 40 odd years, which lifted the country out of near subsistence-level poverty. Keeping its coral atolls and ecosystems intact is thus an immediate economic priority easy to agree on.[14]

Contrast that with the situation in other parts of the world. In recent years, the EU has made a big push towards what it calls its "Blue Growth Strategy" and published detailed – and quite useful – "EU Blue Economy" reports.[15] As with the Seychelles' pioneering "blue bond," the blue in this context refers to the world's oceans, rather than the backdrop of the European flag.

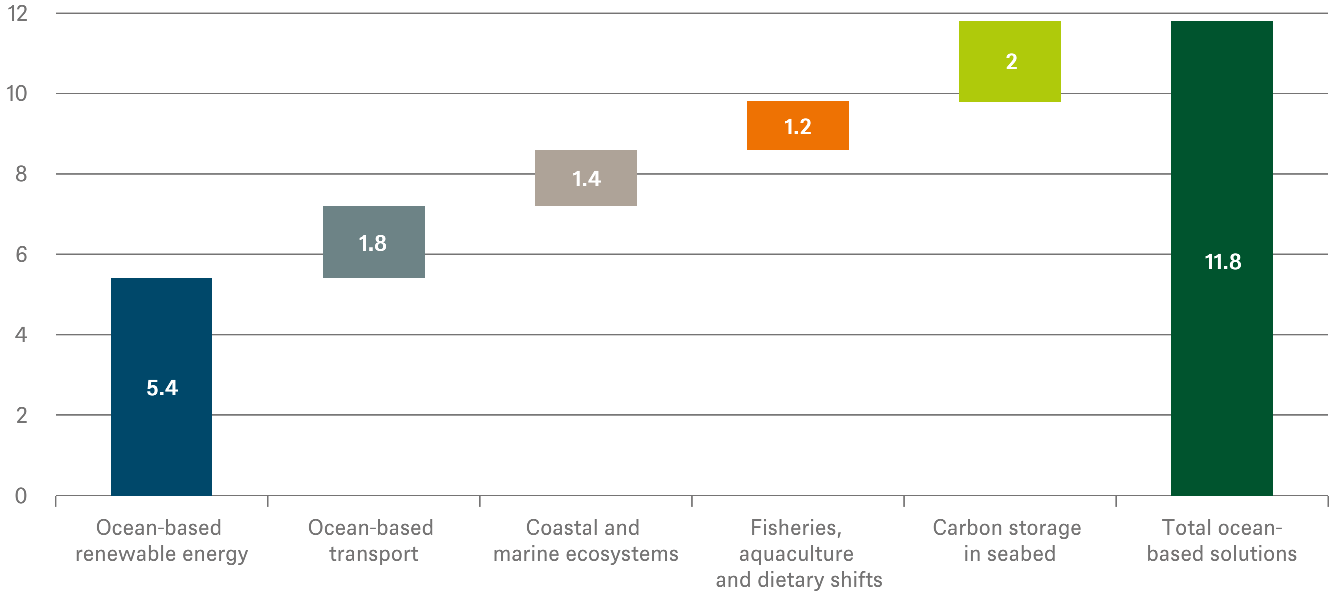
Well, better late than never. For much of its history, the European Common Fisheries Policy struggled to achieve a healthy, sustainable fisheries sector, even within its own territorial waters, resulting in excessive exploitation rates, low stock sizes, low catches, and severely disturbed ecosystems.[16] For all the political buzz coming out of Brussels, recent progress has been lackluster (with a few notable exceptions mostly in smaller member states such as Estonia).[17]

In one sense, at least, the EU's belated interest in the "Blue Economy" is surely welcome, as is that of other international bodies. For example, a new vision has been developed by the High Level Panel for a Sustainable Ocean Economy, an initiative of 14 heads of state supported by extensive research and experts. This vision abandons the false choice between economic development and environmental protection, aiming to integrate the 'three Ps' of effective protection, sustainable production and equitable prosperity. "This approach does not mean just leaving the ocean alone; it means proactively managing human activities to use the ocean wisely rather than using it up, in order to help build a much richer future in which people have more wealth and better health, nature thrives and resources are distributed more equitably." The Ocean Panel set out recommendations for achieving five key transformations across ocean wealth, health, equality, knowledge and finance. These actions could, by 2050, lead to a 40-fold increase in ocean renewable energy, 20% of necessary emission reductions, 6 times more sustainable seafood, USD15.5trn in net benefits from investments, 12 million new jobs and restored habitats and biodiversity (see chart).[18]

[14] https://www.imf.org/en/Publications/CR/Issues/2019/07/01/Seychelles-Staff-Report-for-the-2019-Article-IV-Consultation-and-Third-Review-Under-the-47063
[15] https://blueindicators.ec.europa.eu/sites/default/files/2020_06_BlueEconomy-2020-LD_FINAL-corrected-web-acrobat-pro.pdf
[16] https://www.sciencedirect.com/science/article/abs/pii/S0308597X10000709
[17] https://www.sciencedirect.com/science/article/pii/S0308597X18306614.
[18] https://oceanpanel.org/sites/default/files/2019-10/HLP_Report_Ocean_Solution_Climate_Change_final.pdf

POTENTIAL CONTRIBUTION OF FIVE OCEAN-BASED CLIMATE-ACTION AREAS TO MITIGATING CLIMATE CHANGE IN 2050

Maximum annual emissions reductions in GtCO2e*



Sources: Hoegh-Guldberg. O., et al. "The Ocean as a Solution to Climate Change: Five Opportunities for Action." Report. Washington, DC: World Resources Institute as of 2019

* To stay under a 1.5°C change relative to pre-industrial levels

Whether or not such visions succeed, they might certainly help drum up private sector interest. Protecting marine ecosystems, while simultaneously promoting sustainable development, will no doubt require better governance mechanisms. But especially given the long timelines it typically takes for new technologies to mature, private innovation and capital can play a useful role, too. "Out of the 17 UN Sustainable Development Goals (SDG), oceans have attracted some of the lowest amounts of private capital so far," explains Paul Buchwitz. In our view, the comparative lack of "blue investment" until now could create very interesting possibilities for asset managers willing to focus their capital and influence on making positive change.

GLOSSARY

The Paris Agreement was reached after the 2016 United Nations Climate Change Conference in Paris. It sets goals on greenhouse-gas emissions mitigation, adaption and finance.

The Sustainable Development Goals (SDG) were set in 2015 by the United Nations General Assembly. They are a collection of 17 interlinked goals designed to be a "blueprint to achieve a better and more sustainable future for all".

The World Bank is an international financial institution that provides loans and grants to the governments of emerging countries for the purpose of pursuing capital projects. The World Bank is a component of the World Bank Group.

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