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Accelerating the SDGs through Investments in Marine Natural Capital

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Goal14 of the UN Sustainable Development Goals (SDGs) ('Life Below Water') has received the lowest levels of long-term funding of all SDGs. Less than US\$10 billion was invested in achieving SDG14 between 2015 and 2019; the requirement is around US\$175 billion per year.¹ This lack of investment does not just undermine SDG14 itself, but it also means that the full potential of the ocean for meeting the entire UN sustainability agenda remains largely untapped. Investing in marine ecosystems can help address many global sustainable development challenges—from poverty and hunger to gender inequality and climate change.² They are vital in systems change that accelerates a shift from unfair and extractive economic systems to just and regenerative ones.³

Natural capital refers to the natural resources that regulate all life on Earth.⁴ On land, examples include trees, soil and iconic species such as elephants. In the ocean, examples range from mangrove forests and seagrass meadows to coral reefs and whales. These ecosystems provide essential services such as releasing oxygen, removing pollutants from water, and regenerating biodiversity. In addition to their other recognised sources of value, including intrinsic and cultural value, economists have started to put an economic value on these ecosystem services.⁵ This could provide a vital financial lifeline, for example via carbon credits.

The following paragraphs present an overview of how investing in each of these four marine ecosystems (i.e., coral reefs, mangrove forests, seagrass meadows, and seaweed) could accelerate the SDGs, help preserve biodiversity, and harness the blue economy's full potential.

Coral Reefs: Rainforests of the Sea

Reefs are often called the “rainforests of the sea” because of the biodiversity found in the habitats created by corals.⁶ Although they encompass less than 0.5 percent of the ocean floor, coral reefs provide a vital habitat for around 30 percent of fish species.⁷ Coral reefs provide important ecosystem services that support the SDGs. For example, they provide food and well-being to more than 1 billion people, thereby contributing to SDG2 (Zero Hunger). They also create vital jobs from fishing, recreation and tourism, contributing to SDG1 (No Poverty) and SDG8 (Decent Work and Economic Growth). Meanwhile, they absorb 97 percent of coastal wave energy, supporting coastal resilience (captured for example in SDG11: Sustainable Cities and Communities).⁸ Then there is also the largely untapped potential for natural medicine from reefs, which, among other things, could support SDG3 (Good Health and Well-being).

Despite these benefits, human activities that cause pollution, climate change and overfishing, have caused the loss of half of the world's coral reefs since the 1950s.⁹ Based on current trends, 90 percent of coral reefs could be lost by 2050.¹⁰

For these reasons, investing in coral reef restoration will be important in preserving biodiversity, harnessing the blue economy, and accelerating the SDGs. Recent progress includes investing in Indigenous-led governance of coral reefs,¹¹ restoring coral reefs through regenerative tourism,¹² impact investment to support the Turneffe Atoll marine protected area (MPA) in Belize,¹³ the Coral Reef Rescue Initiative,¹⁴ and the Global Coral Reefs Fund.¹⁵

Mangrove Forests: An Underrated Biodiversity Powerhouse

Mangrove forests are a biodiversity and climate powerhouse, contributing significantly to SDG13 (Climate Action). They store up to five times more carbon than tropical forests.¹⁶ This makes them powerful carbon sinks, along with other so-called ‘blue carbon’ ecosystems such as seagrass meadows and salt marshes.¹⁷ However, similar to coral reefs, mangroves are under threat: human-driven impacts

represent around 62 percent of total mangrove losses of some 600 km² over the decade from 2010 to 2020.¹⁸

In addition to climate change mitigation, they also support adaptation. For example, they offer storm and flood defence services, protecting at least 15 million people and preventing more than US\$65 billion in property damage each year.¹⁹ This does not only contribute to resilient communities (SDG11), but also offers opportunities for new insurance products and partnerships (SDG17). The Ocean Risk and Resilience Action Alliance (ORRAA) works to establish a voluntary carbon market to restore mangroves and support local communities in Tanzania.²⁰ Reinsurance companies such as Swiss Re and Munich Re evaluate habitat-restoration projects that take account of the risk-reduction value of mangroves.²¹ Meanwhile, unlike their terrestrial counterparts, mangrove forests are protected from wildfires.

Investing in mangrove forests has significant positive impacts on accelerating the wider global sustainability agenda. They provide nurseries for global fisheries, thus supporting SDG2, among others. Across the Caribbean, for example, researchers have identified 181 coastal sites across 20 territories and countries with cost-effective opportunities for mangrove restoration, particularly Cuba, Bahamas and the US.²² In Kenya, the Mikoko Pamoja project provides long-term incentives for mangrove restoration and protection through community engagement and participation.²³ And in Sri Lanka, sustainable development opportunities include microloans for communities in return for mangrove conservation, supporting SDG.²⁴

Seagrass Meadows: ‘Hidden’ Heroes of the Ocean

Seagrass meadows—the world’s only flowering plant capable of living in seawater—account for 10-18 percent of the ocean’s capacity to store carbon and can capture carbon from the atmosphere up to 35 times faster than tropical rainforests despite comprising less than 0.1 percent of the sea floor.²⁵ The carbon-sequestration value of seagrass alone has been valued at US\$2.3 trillion, already making a significant contribution to SDG13.²⁶

Wider co-benefits that support the sustainable development agenda include providing a home for fish as well as a nursery and food source for marine life;²⁷ protecting coastlines;²⁸ producing oxygen (to the extent that they have been called the “lungs of the ocean”);²⁹ and cleaning the ocean from polluting nutrients produced by humans on land.³⁰

Despite the direct and indirect benefits of seagrass meadows, these “hidden” heroes of the ocean are being lost at a rate of around 7 percent per year, mainly due to human-induced factors such as pollution, global heating, coastal development, and overfishing.³¹

In recent years, several restoration projects have provided hope that the decline of seagrass meadows can be reversed. In the UK, for example, the country’s largest seagrass restoration project has started on the seabed off the North Wales coastline. The project is a great example of the power of partnerships (SDG17), involving charities, academics and the local community.³² In The Bahamas, a mapping exercise has revealed that the island’s seagrass is equivalent to a carbon storage 68 times the amount of CO₂ emitted by The Bahamas in 2018.³³ Economist Ralph Chami and his team have calculated that the carbon-sequestration value of this seagrass may be around US\$150 billion.³⁴ There is huge potential in turning the ecosystem services provided by seagrass and other blue-carbon ecosystems—from improving food security and protecting fauna to investing in the communities and employment—into investable carbon credits for companies. This is one of the main challenges in combining the power of marine natural capital with regenerating biodiversity and accelerating the SDG agenda.

‘The Seaweed Revolution’

Seaweed, or macroalgae, has a number of applications in important sustainable development areas such as food, feed, agricultural fertilisers, pharmaceuticals, cosmetics, bio-plastics and bio-fuel. As Vincent Doumeizel highlights in his book, *The Seaweed Revolution*, “Seaweed could feed people, replace plastic, decarbonise the economy, cool the atmosphere, clean up the oceans, rebuild marine ecosystems and reduce social injustice by providing jobs and income to coastal populations where fishing resources are disappearing.”³⁵

In Indonesia, for example, the seaweed industry provides employment to around 1 million people, many of whom are former artisanal fishers.³⁶ Meanwhile, the macroalgae aquaculture system known as “marine permaculture” holds huge potential in harnessing wave energy to restore natural nutrient upwelling and grow seaweed at scale. The system could help to farm seaweed, restore ocean habitats, and permanently sequester carbon in places like the Philippines.³⁷ This means accelerating investment in seaweed could be a great way of advancing the UN sustainability agenda, from its role in climate action (SDG13) and food security (SDG2) to its contribution to decent jobs (SDG8) and as a potential biofuel (SDG7).

Although the carbon-sequestration capacity of seaweed is at least 173 million tonnes, its role as a blue-carbon ecosystem has so far been underrated.³⁸ The nutrient bio-mitigation services of seaweed have been valued at US\$1.2-3.5 billion.³⁹ Globally, the commercial seaweed market is projected to grow from US\$15 billion in 2021 to US\$25 billion in 2028, representing a compound annual growth rate (CAGR) of 7.5 percent and therefore making seaweed one of the most promising products in the seafood industry.⁴⁰

Integrating Marine Natural Capital into the Sustainable Development Agenda

As we have seen, marine natural capital should play an even greater role in accelerating the sustainable development agenda. It already makes a significant contribution as a nature-based solution (NBS) to climate mitigation and adaptation—a largely underrated role. Investing more in these ecosystems is not only a cost-effective way of accelerating SDG13 (climate action), but could turbocharge all SDGs, notably SDG14 (ocean), SDG2 (food security), SDG3 (health), SDG8 (jobs), SDG11 (communities) and SDG17 (partnerships).

Business, economists and financiers have important roles to play in assisting communities and start-ups to build a pipeline of investable projects that help regenerate ocean ecosystems. The recent work of economists to appreciate the economic value of these ecosystems (in addition to their many other dimensions of value) is a critical step in paving the way for more investment. The creation of high-quality blue carbon markets has recently been boosted by the World Bank and other development finance institutions focusing increasingly on “results-based climate finance” based on verified emissions reductions through carbon credits.⁴¹

Policymakers play a critical role in integrating marine natural capital into policy instruments, such as the Nationally Determined Contributions (NDCs) that are crucial for global climate action. Enabling factors include participation by communities; voluntary carbon markets and other types of financial compensation schemes; and improvements in carbon accounting and verification methodologies.⁴² Finally, the deal agreed at the UN’s COP15 biodiversity talks in Montreal at the end of 2022 offers a great opportunity to align climate and biodiversity targets to harness the power of marine natural capital.

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