

Blue Economy: Sector Overview

According to the United Nations, the Blue Economy “includes all economic sectors and activities that together determine whether the use of oceanic and water resources is sustainable”.

Economic activities related to the ocean include offshore oil and gas, marine equipment and construction, container shipping, shipbuilding and repair, cruise tourism, port activities and marine energy. They also include the ocean’s natural assets and the ecosystem services it provides, from fisheries to carbon sequestration.

The primary focus of the ocean economy is on maximising economic benefits. This often leads to ecological degradation and resource depletion at the expense of marine ecosystems and the communities that depend on them.

The Blue Economy is not one market. It spans everything from capital-heavy shipping, ports and offshore renewable energy to early-stage ocean biotech and observation software.

Food from the ocean

Aquaculture, fisheries and the alternative-seafood companies. Hardware and biology-heavy and increasingly tied to food-security and sustainability narratives.

Shipping, ports and ocean energy

The most capital-intensive layer: shipping and ports, shipbuilding and refit, marine transportation, and blue renewable energy (offshore wind, wave, tidal and floating solar).

Bluetech, biotech and ocean protection

Ocean observation and data, blue biotechnology, and ocean environmental protection and regeneration (including ocean-based carbon removal).

A Sustainable Blue Economy

‘Blue economy’ has become the most widely used term to distinguish a future in which ocean-related economic activities are guided by sustainable considerations.

In finance circles, the term has largely focused on the decarbonisation of existing ocean economy activities as the world transitions to net zero greenhouse gas emissions to meet the Paris Agreement temperature targets.

Other definitions are wider, encompassing the sustainable use of resources for socioeconomic benefit, including supporting jobs and livelihoods, promoting poverty reduction, stewardship of the ocean’s resources, and marine education and research.

As a more ambitious and holistic view is increasingly taken of the ocean economy that integrates economic growth with environmental sustainability and social equity, alternative terms are being used in place of ‘blue economy’, such as ‘sustainable ocean economy’ and ‘regenerative blue economy’.

One of the 17 Sustainable Development Goals (SDGs) is dedicated to the ocean: number 14, ‘Life Below Water’ aims to conserve and sustainably use the ocean, seas and marine resources. It sets out seven targets for a sustainable ocean economy by 2030.

There have been some small improvements in the sustainability of fisheries and an expansion of Marine Protected Areas (MPAs), but these cover only around 7.5% of the

oceans. It has been estimated that an additional investment of US\$8–11 billion is required to achieve the objective of creating MPAs that cover 30% of the ocean by 2030.

Governments and companies are also taking an increasing interest in nature-based solutions to climate change provided by the ocean. These include carbon sequestration and protecting coastlines from the physical impacts of climate change. However, only 9% of total investments in nature-based solutions are in the marine environment.

Blue Economy risks

Transitioning to a sustainable blue economy introduces challenges that can have financial implications, for example, through regulatory changes, technological innovations, shifting consumer preferences and reputational considerations.

This may include removing subsidies that encourage overfishing or strengthening environmental regulations, including the designation of new marine protected areas in line with the global target of conserving at least 30% of land, waters and seas by 2030.

International agreements may also result in additional costs and regulatory burdens for specific industries that currently utilise marine resources for free.

Financial and economic policymakers need to assess these transition risks alongside physical risks that could worsen if progress is not made in the transition to a sustainable economy: over US\$8 trillion in assets are potentially at risk from extreme weather events, sea-level rise and other threats related to climate change. Shifting weather patterns, exacerbated by phenomena like El Niño, can further amplify risks, particularly for less-prepared regions.

Challenges in the F&A Sector

Global demand for food is set to increase by 70% by the year 2050, and it is essential that food production in the future has the lowest possible utilisation of those resources that are in scarcity and with the lowest possible impact on the environment and climate.

Marine food production is more efficient in terms of land and resource utilisation and has a lower carbon footprint than food production on land. Moreover, marine food production has a much lower utilisation of fresh water than land-based food production.

The potential for increased food production from the sea is vast, provided that it remains within environmentally sustainable boundaries.

Low-trophic species such as algae, mussels and bottom fauna exploit the excess nutrients from agriculture, aquaculture and human activity, and convert these to harvestable biomass. We have the potential to harvest substantially higher volumes of biomass/food from the sea, without having to add additional resources in the form of feed, fertiliser etc.

The environmental challenges faced by the aquaculture industry can be solved and the industry has the potential to create eco-friendly jobs for the future. Our sea waters are our blue fields of the future. Increased farming of marine algae, fish and shellfish provides an environmentally efficient method of meeting the need for food for the coming generations without exhausting our valuable resources of fresh water and land.

Investing in the F&A Sector

Fisheries

The fisheries startup segment is very nascent, with just over \$530M invested since 2016 and funding peaking around \$150M in 2022. Most has gone into seafood logistics and marketplaces such as Captain Fresh (a B2B seafood marketplace tracking the value chain from procurement to retail) and Seafood Souq (a traceable seafood-trade marketplace with blue-financing tools).

Startups improving the sustainability of fishing itself are also funded, such as Ava Ocean (regenerative seabed harvesting) and Blue Ocean Gear (IoT tracking to prevent lost gear, a major source of ocean plastic). Fish supply 17% of animal protein globally, and over 3.3 billion people rely on seafood for at least a fifth of their animal-protein intake. Overfishing and destructive practices such as dredging have depleted stocks and harmed ecosystems.

Aquaculture

The global aquaculture market is the world's fastest-growing food production sector, supplying over 50% of global seafood consumption and playing an irreplaceable role in global food security and nutrition.

Investment funding into aquaculture peaked at \$750M in 2022 (2.6x its 2021 level), with over \$2B invested since 2016. As wild stocks come under strain (90% of large predatory-fish stocks have already disappeared), aquaculture has increasingly filled the gap: fish farming now supplies about 58% of the fish we eat and has kept prices down.

Not all of it is sustainable, though, with salmon farming linked to escapes, heavy antibiotic use and feed pressure. Leading sustainable approaches include deep-ocean bivalve farming (Oceano Fresco), antibiotic-free renewable-powered farming (The Kingfish Company) and controlled land-based aquaculture (LISAqua). Separately, alternative-protein seafood has attracted over \$700M since 2016, led by lab-grown players such as Wildtype and BlueNalu.

Key players, including Mowi, Charoen Pokphand Group, Umios Corporation, SalMar ASA, and Austevoll Seafood ASA, compete through species specialization, geographic market breadth, farm technology investment, and sustainability certification programs that are increasingly demanded by European and North American seafood retail buyers.

Sources: Dealroom, LSE Grantham Institute, Euronext.