

Policy Insights

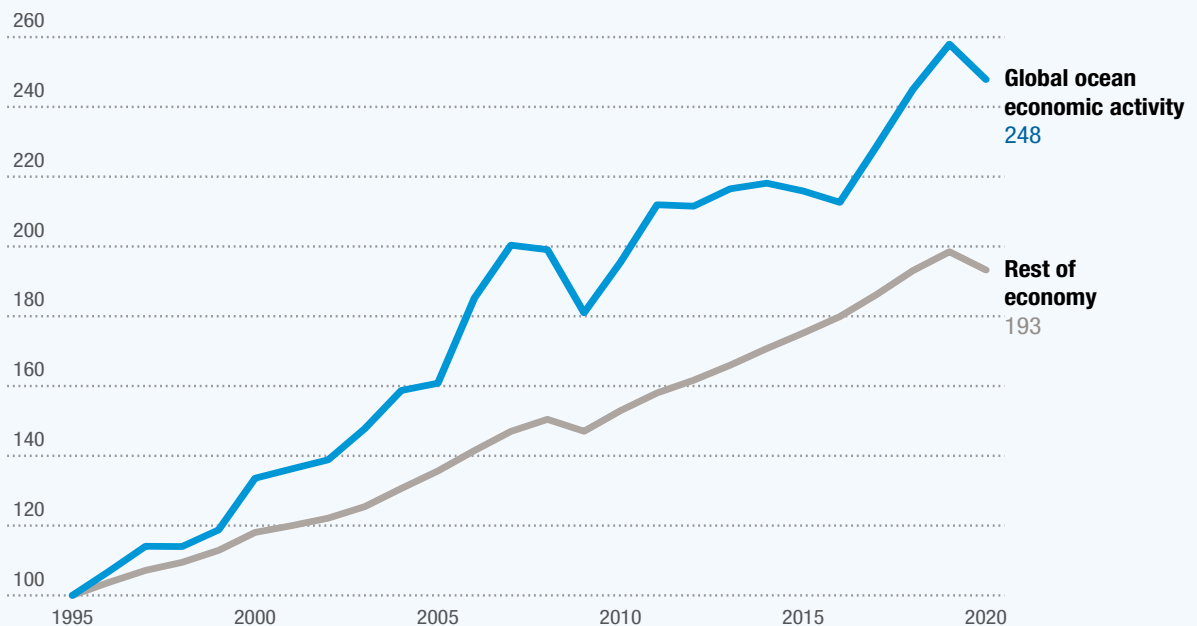
Sustainable ocean economy: A key and fast-growing sector at risk

KEY TAKEAWAYS

- ▶ **The ocean economy** offers critical opportunities to enhance food security, value addition, connectivity and economic diversification.
- ▶ **In 2023, global ocean trade reached \$2.2 trillion** (\$1.3 trillion in services and \$900 billion in goods), representing about 7 per cent of global trade.
- ▶ **Global ocean trade is increasingly threatened** by climate events, sea level rise, biodiversity loss, overexploitation of marine life, and plastic and other forms of pollution.
- ▶ **UNCTAD calls for improved ocean economic governance and data collection**, climate-adaptive and resilient marine infrastructure, the promotion of sustainable South-South trade, and scaling up blue finance and sustainable marine-based innovations.



➤ The ocean economy is growing faster than the global economy. 1995-2020, 1995 = 100



Source: UN Trade and Development (UNCTAD) 2025 based on OECD Ocean Economy Monitor, preliminary estimates, June 2024.

Between 1995 and 2020, the ocean economy has grown 2.5 times, outpacing the 1.9-fold expansion of the world economy, with developing economies driving much of this growth. An estimated 600 million livelihoods¹ and 100 million jobs depend on the ocean economy,² particularly in fisheries, aquaculture, and tourism, with the vast majority in developing countries.

UNCTAD measures ocean trade: database on trade in ocean goods and services

In its Sustainable Ocean Economy classification, UNCTAD identifies ocean economy sectors that can serve as “a vehicle toward a more sustainable and inclusive economic path on the marine and coastal environment. It encompasses all industries and tradable sectors that sustainably utilize and contribute to the conservation of ocean, seas and coastal resources for human benefit in a manner that maintains all ocean resources over time.”

Based on this classification, UNCTAD has developed databases on trade in ocean goods and services, providing disaggregated data on exports and imports by country, as well as by geographical and economic groupings. Covered sectors include primary marine fisheries, processed seafood, ships, port equipment, and high technology manufactures for goods, and maritime transport, coastal and marine tourism, port services and marine R&D for services. Additional databases offer indicators on ocean trade, such as revealed comparative advantage, product and market concentration, and exports per capita.

¹ FAO 2023. SOFIA 2022 report.

² OECD. 2025. Over 100 million jobs depend on the ocean economy — here's where and why.

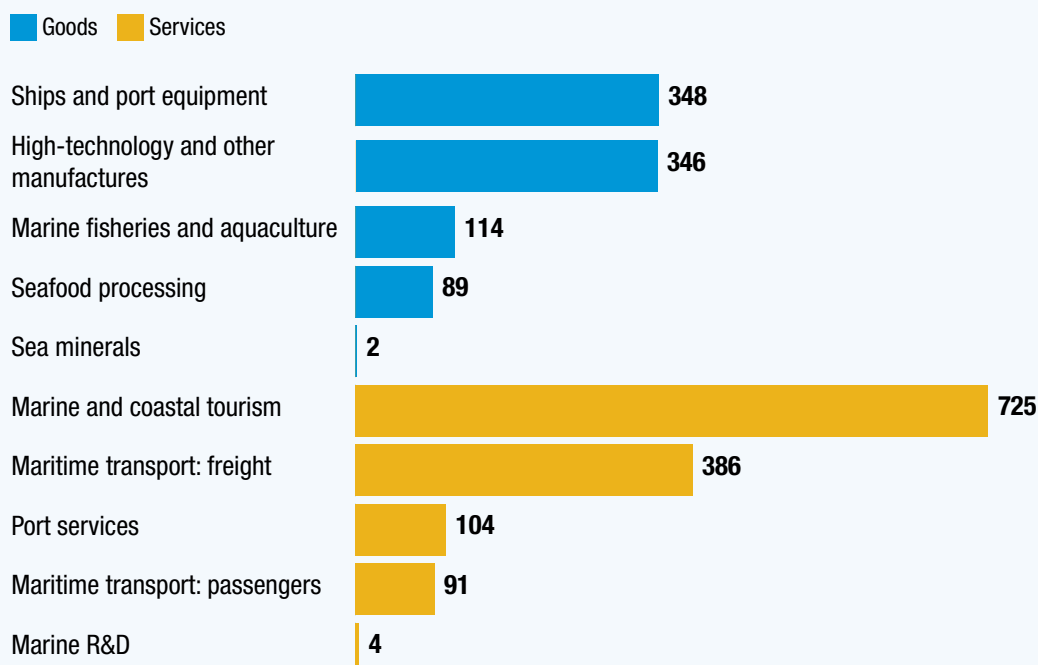


Global ocean trade trends



Ocean services represent 60 per cent of total ocean trade

Exports per category of ocean-based goods and services, 2023, billion \$



Source: UNCTAD, 2024. Ocean Trade in Goods and Services Databases.

In 2023, trade in ocean goods and services totalled \$2.2 trillion - \$900 billion in goods and \$1.3 trillion in services. International coastal and maritime tourism alone generated \$725 billion in 2023, accounting for one-third of total ocean trade. Other leading sectors include maritime freight transport, ships and port equipment, and high-tech and other manufactured goods – such as renewable energy machinery, sports equipment, pharmaceuticals and electronics.

That same year, Asia exported \$912 billion and Europe \$868 billion in ocean-related products and services, together representing over 80 per cent of global ocean exports. Economies with a trade surplus in ocean goods often have a deficit in ocean services, and vice versa. In 2023, China was the largest net exporter of ocean goods, with \$155 billion in exports and \$58 billion in imports. However, it ran a net deficit in ocean services – particularly maritime freight transport – exporting \$59 billion and importing \$97 billion.

In contrast, most developed and developing economies (excluding China) reported surpluses in ocean services, largely driven by marine and coastal tourism, but deficits in goods. SIDS maintained surpluses in both goods and services, with services making up 87 per cent of their total ocean exports in 2023. Least Developed Countries (LDCs), many with large coastlines, face trade deficits in both ocean goods and services. Helping LDCs develop their ocean exports is essential to meet target 7 of SDG 14 by 2030.³

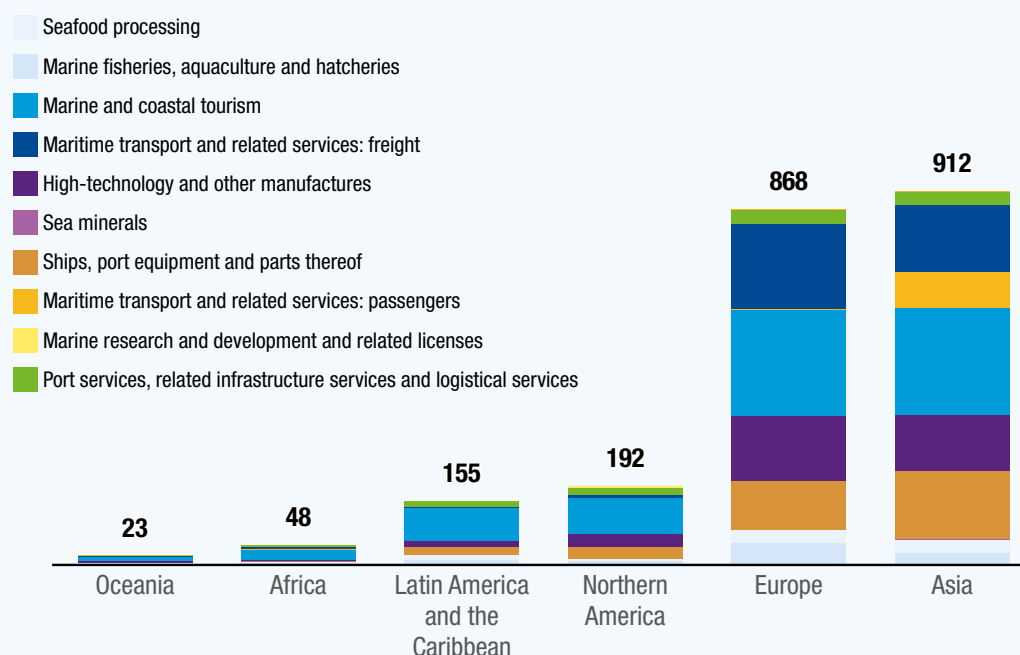
³ SDG 14.7: “By 2030 increase the economic benefits to SIDS and LDCs from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism”.





Europe and Asia account for over 80 per cent of ocean goods and services exports

Exports of ocean goods and services by region, 2023, billion \$

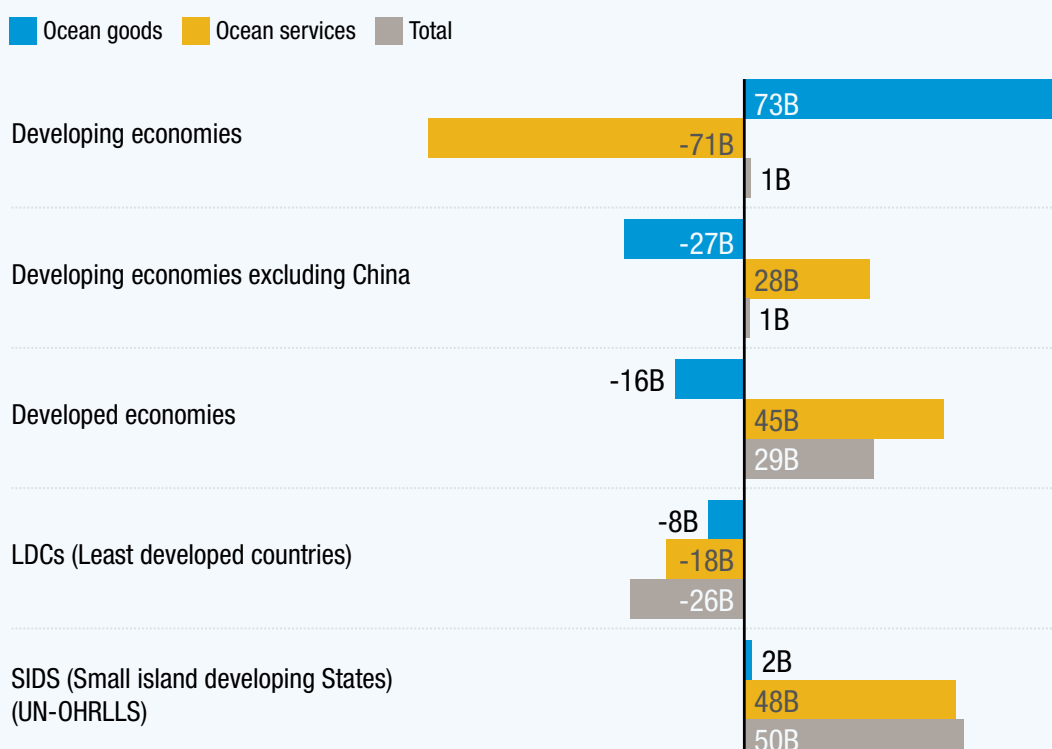


Source: UNCTAD, 2025. Ocean Trade in Goods and Services Databases.



Trade balance in ocean goods and services

2023, billion \$



Source: UNCTAD, 2025. Ocean Trade in Goods and Services Databases.



The impact of tariffs on fisheries

The United States is a net major importer of primary (unprocessed) fisheries, exporting \$4.5 billion and importing \$16 billion. Following the United States' introduction of a 10 per cent tariff on nearly all fisheries imports (and 30 per cent on Chinese imports), the United States' prices on fish products are likely to rise due to limited capacity to scale up local production. Demand for fisheries imports may fall, leading to increased prices for local fish products. Global wild fish stocks are already overfished, and aquaculture production requires time to scale up. Additionally, the United States' recent rollback of certain regulations⁴ on fishing and conservation could further pressure fish stocks in the medium and long term.

Tariffs pose risks for countries heavily reliant on United States markets for their primary fisheries exports. While Mexico and Canada are the most exposed to the United States' tariffs, their participation in the United States-Mexico-Canada Agreement (USMCA) enables them to export duty-free when they meet rules of origin (RoO). Products that do not comply with USMCA RoO face a 25 per cent tariff. For primary fisheries, RoO compliance is relatively straightforward - unlike for complex manufactured goods - allowing Mexico and Canada to potentially enhance their competitiveness in the United States market amid broader global tariffs.



Mexico, Canada and Brazil are the most exposed to United States tariffs on fisheries

Top 10 exporters of marine primary fisheries to the United States in 2023

Top 10 exporters of fisheries to the United States	Value of fisheries exports in \$	Exposure (% of total fisheries exports)	Tariffs in 2023	Tariffs as of 14 May 2025	Reciprocal tariffs
Canada	3.2B	63	0	0*	25
Chile	2.9B	38	0	10	10
Norway	1.2B	8	0	10	15
European Union	1.2B	5	2	10	20
China	1.1B	11	1	30**	145
Japan	337.3M	20	1	10	24
Iceland	293.5M	14	0	10	10
Brazil	287.3M	55	0	10	10
Mexico	276.8M	74	0	0*	25
New Zealand	250.7M	21	0	10	10

Source: UNCTAD Ocean Trade in Goods Database. 2025. WITS 2025.

Note: Exposure = total fisheries exports to United States / total fisheries exports. Tariffs are effectively applied rate (weighted average). *Mexican and Canadian fisheries are exported to the United States duty free if compliant with USMCA, or face a 25 per cent tariff. **From 14 May 2025, US tariffs on Chinese imports are reduced from 145 to 30 per cent for 90 days.

⁴ Presidential Actions. Restoring American seafood competitiveness (2025). See: <https://www.whitehouse.gov/presidential-actions/2025/04/restoring-american-seafood-competitiveness/>




For countries such as Brazil, where 55 per cent of primary fisheries exports are destined for the United States, and China, which faces a 30 per cent tariff, exports are likely to be redirected toward domestic markets or alternative trading partners, given the strong global demand for primary fisheries products.

Salmons are the highest-value commercial species the United States imports. In 2023, salmon imports exceeded \$5.5 billion, with Atlantic Salmon fillets alone accounting for around \$4.5 billion.⁵ In 2022, domestic production of salmon fillets in the United States reached \$969 million, \$827 million derived from wild capture/commercial fishing, and \$115 million from aquaculture.⁶ Since both Chinook and Atlantic salmon are listed as overfished and subject to overfishing, and salmon farms require a three-year production cycle, tariffs are expected to push domestic availability down and prices up.⁷



Salmon is the most imported species into the United States

Main species exported by top 10 primary fish exporters to the United States

Exporters	Main species exported to the United States
 Canada	Crabs, lobsters, farmed Atlantic salmon
 Chile	Salmon
 Norway	Salmon
 European Union	Salmon, octopus, seabass
 China	Cod, salmon
 Japan	Japanese amberjack scallops
 Iceland	Cod, salmon
 Brazil	Snapper, rock lobster, tilapia
 Mexico	Shrimp, lobsters
 New Zealand	Mussels, Pacific salmon, orange roughy

Source: ITC Trade Map, EUMOFA (2024), The EU fish market, 2024 edition.

⁵ ITC Trade Map data.

⁶ National Marine Fisheries Service (2024). Fisheries of the United States, 2022. U.S. Department of Commerce, NOAA Current Fishery Statistics No. 2022. Available at: <https://www.fisheries.noaa.gov/national/sustainable-fisheries/fisheries-united-states>

⁷ National Marine Fisheries Service (2024). Annual Report to Congress on the Status of U.S. Fisheries. Status of Stock 2023. U.S. Department of Commerce, NOAA. Available at: <https://www.fisheries.noaa.gov/national/sustainable-fisheries/status-stocks-2023>



Summary and outlook

The ocean economy has shown clear signs of post COVID-19 pandemic recovery over the past two years, with trade in goods and services expanding in 2023 and a positive trend projected for 2024.

Growth in services was driven largely by the resurgence of international travel and coastal and maritime tourism, which returned to pre-pandemic levels after several years of disruption. In contrast, maritime freight transport declined notably in 2023 due to falling freight rates, a result of weak demand and overcapacity. However, the sector saw a sharp rebound in early 2024, as global freight rates surged amid ongoing volatility in the Suez and Panama canals, vessel rerouting and rising operational costs.⁸

Ocean goods trade remained stable, supported by sustained demand for port infrastructure, processed fish and seafood, and high-technology marine products. However, trade disparities across countries and sectors persist, reflecting uneven capacities to harness ocean-based economic opportunities.

Looking ahead, ocean goods and services trade is expected to remain stable into 2025, though uncertainties linked to trade tensions and maritime disruptions persist. Continued demand for aquatic foods, coastal tourism and marine-based innovations is likely to support growth, while investment in aquaculture, marine biotechnology and resilient infrastructure could expand trade opportunities. At the same time, several key challenges are expected to shape ocean trade performance in the years ahead:



► Disruptions in global shipping routes

Climate-related droughts and regional tensions are causing delays and longer shipping distances, increasing volatility in maritime transport. These challenges are expected to persist into 2025, raising costs, increasing GHG emissions and undermining supply chain reliability, especially for SIDS and LDCs.

► Rising demand for marine-based alternatives and sustainable ocean food systems

Pressure on overexploited wild fish stocks is expected to continue. Growing demand for sustainable materials, including marine-based non-plastic substitutes, offers opportunities to address the triple planetary crisis, while creating business and trade prospects for developing economies. These initiatives must be governed responsibly to ensure sustainability and promote investment in scalable ocean-based solutions. For instance, seaweed-derived materials and sustainable aquaculture are gaining traction to meet nutritional needs, provide industrial biomass, reduce reliance on fossil fuel-based plastics and open new export opportunities, particularly for coastal and island economies.

► Tightening environmental and climate policies

New maritime transport policies - such as those under the revised IMO GHG Strategy⁹ and green port initiatives - are set to reshape trade costs, logistics and competitiveness. While essential for decarbonisation and climate resilience, these measures may disproportionately impact countries with limited access to finance and to blue and green technologies.

⁸ UNCTAD. 2024. <https://unctad.org/news/high-freight-rates-strain-global-supply-chains-threaten-vulnerable-economies>

⁹ IMO (2023). See: <https://www.wcdn.imo.org/localresources/en/OurWork/Environment/Documents/annex/MEPC%2080/Annex%2015.pdf>



► **Increasing trade policy uncertainty**

More recently, global trade tensions could disrupt ocean goods trade. Tariffs imposed on steel and aluminium are already increasing shipbuilding and ports facilities costs. Traditional bilateral trade flows may also be affected due to asymmetric new tariffs being imposed in different markets. Ocean services will also be impacted, such as maritime freight transport services which could face weaker demand compared to previous years and changes in maritime routes. Higher or volatile tariffs on ocean goods are likely to disrupt traditional trade flows, affecting both consumers and exporters.

► **Financing gaps in sustainable ocean sectors**

Despite growing global interest, financial flows to the ocean economy remain limited. In 2022, ocean-related ODA totalled just \$2.4 billion – far below what is needed to meet SDG 14.¹⁰ A more coordinated approach is therefore essential. UNCTAD's proposed “Blue Deal” calls for targeted public and private investments of around \$2.8 trillion across four priority areas: mangrove conservation and restoration, decarbonisation of international shipping and fisheries, sustainable ocean-based food and non-food production, and coastal and offshore wind energy.¹¹ This level of investment is critical for scaling solutions, ensuring inclusive and sustainable trade outcomes and achieving the full implementation of SDG 14 by 2030 and beyond.

¹⁰ SDG14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development. OECD (2024). Data Platform on Development Finance for the Sustainable Ocean Economy.

¹¹ UNCTAD (2023). Trade and Environment Review.



Global ocean trade trends at the sectoral level



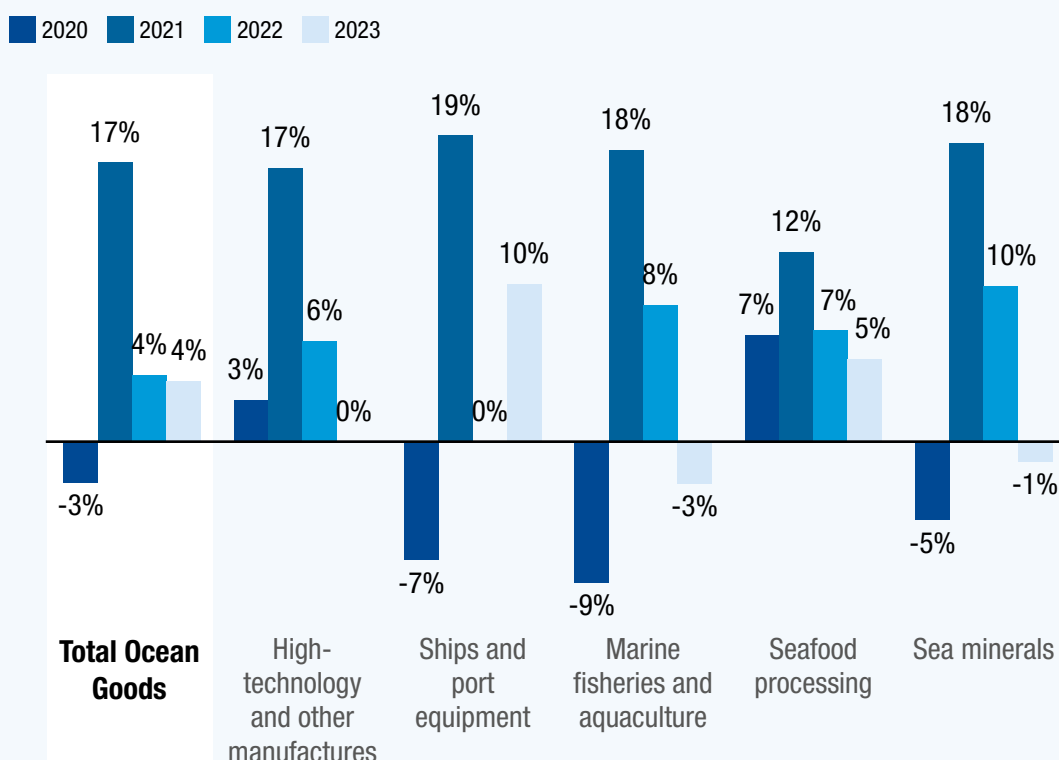
Between 2020 and 2023, overall trade in ocean goods grew by 26 per cent.

In 2023, the ships and port equipment sector expanded fastest (by 10 per cent), followed by processed fisheries and seafood, which increased by 5 per cent.



Ocean goods trade grew by 4 per cent in 2023, driven by a 10 per cent growth in ships and port equipment

Growth rate of ocean goods trade sectors



Source: UNCTAD, 2024. Ocean Trade in Goods Database.

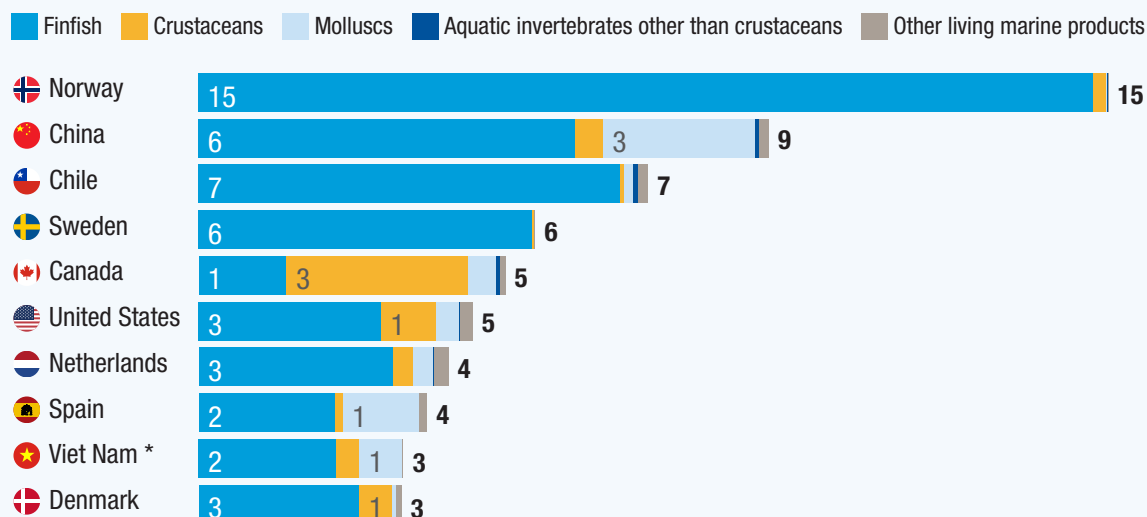
In 2023, global exports of primary (unprocessed) marine fisheries and aquaculture products reached \$114 billion. The European Union led global exports with \$28 billion in shipments, followed by Norway (\$15 billion), China (\$9 billion) and Chile (\$7 billion). The European Union was also the largest importer, accounting for over one-third of global demand, with imports valued at \$42 billion in imports. The United States and China followed, at \$16 billion and \$13 billion in imports, respectively.





Norway, China and Chile are the biggest exporters of primary marine fisheries

Top 10 primary marine fisheries exporters in 2023, billion \$



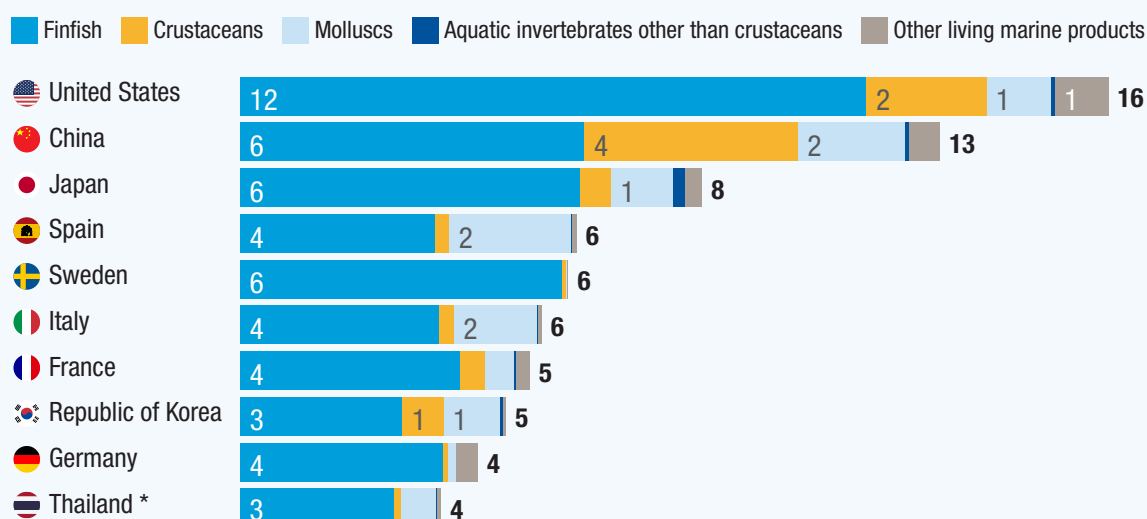
Source: UNCTAD. 2024. Ocean Trade in Goods Database.

Note: *2022 data used for countries without 2023 figures.



The United States is the biggest market for primary marine fisheries

Top 10 primary marine fisheries importers in 2023, billion \$



Source: UNCTAD. 2024. Ocean Trade in Goods Database.

Note: *2022 data used for countries without 2023 figures.



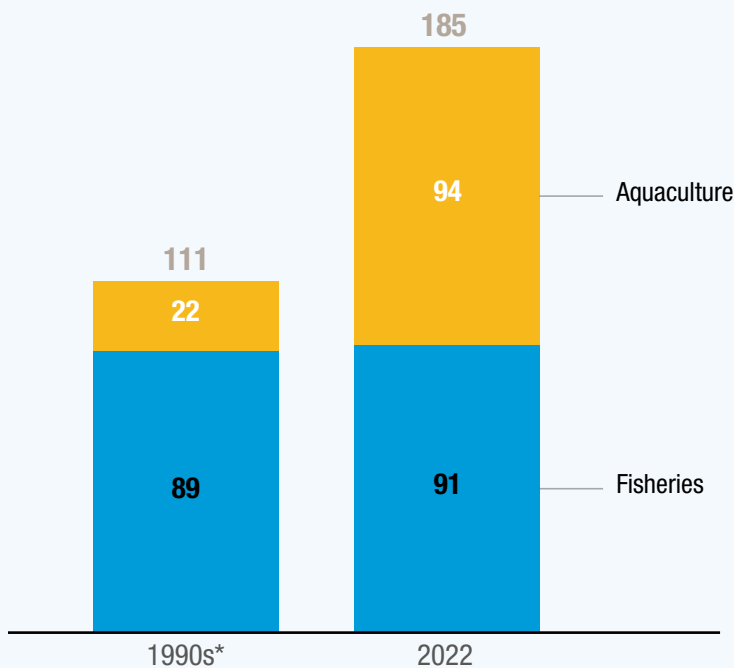
As global demand for aquatic foods has continued to rise and wild fish stocks are increasingly depleted, aquaculture has filled the gap – driving a structural shift in the sector from wild harvesting to farming. While fisheries capture has remained stable at approximately 90 million tonnes since the 1990s, aquaculture production increased from 22 million tonnes to 94 million tonnes between the 1990s and 2022.

Demand has been a major driver of global fish trade growth. By 2022, aquaculture accounted for more than half of total aquatic animal production, surpassing wild capture,¹² and represented 57 per cent of aquatic food consumed by humans.



Since the 1990s, aquaculture as a share of global aquatic production increased from 20 to 51 per cent

Global production of aquatic animals, million tonnes



Source: FAO, 2024. SOFIA report.

Note: *average per year.

In 2023, ocean services trade increased by 2 per cent compared to 2022, though performance varied significantly across sectors. International marine and coastal tourism expanded by 36 per cent, building on an 89 per cent growth in 2022 and 30 per cent in 2021. The sector only returned to pre-2020 levels in 2023. By contrast, maritime freight transport declined by 30 per cent in 2023 with respect to 2022, driven by lower freight rates caused by weak demand and overcapacity.

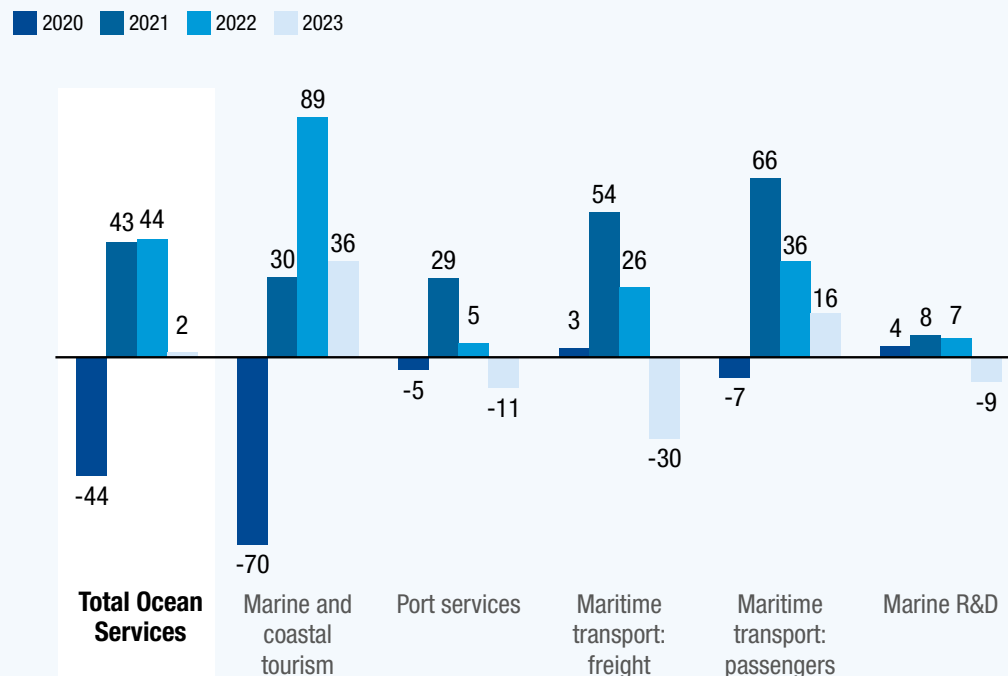
¹² FAO. 2023. SOFIA 2022 report.





While international marine and coastal tourism expanded by 36 per cent in 2023, marine freight services fell by 30 per cent

Growth rate of ocean services trade sectors



Source: UNCTAD, 2024. Ocean Trade in Services Database.



Global trade update

Facts and figures

New business opportunities and accrued governance

KEY TAKEAWAYS

- ▶ **A substantial share of ocean trade** and the broader ocean economy face existential risks from the triple planetary crisis: climate change, pollution and biodiversity loss, including from overfishing.
- ▶ **International trade can be part of the solution** by enhancing national and global governance frameworks, reducing costs, improving management, streamlining customs for perishable goods, promoting innovative sustainable ocean products, and enabling decarbonisation efforts.
- ▶ **Recent interest by certain nations in starting deep-sea mining on the high seas**, pushed by the quest towards critical minerals and the demand for both renewable energy and electronic products, could lead to new exploitation activities that raise significant environmental concerns and risks to marine life and ecosystems. If not properly regulated under a precautionary approach by the International Seabed Authority (ISA), such activities may also hinder multilateral efforts towards conservation of marine biodiversity in areas beyond national jurisdiction.
- ▶ **Action-oriented recommendations by France and Costa Rica**, as co-chairs of the 5th UNCTAD Ocean Forum, provide a solid roadmap for Member States to consider at the 3rd UN Ocean Conference and the 16th UNCTAD Ministerial Conference in 2025.

Biodiversity loss



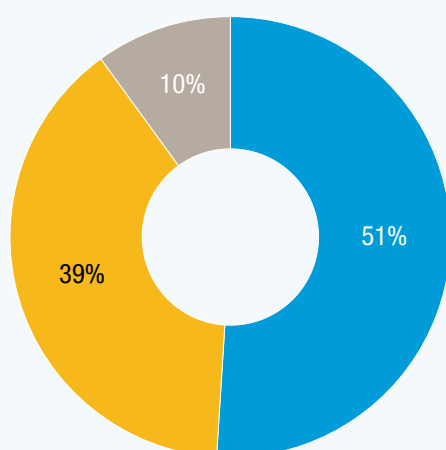
Between 1974 and 2021, the share of marine fishery stocks classified as overfished worldwide increased from 10 per cent to about 38 per cent, while the share fished to the limit of sustainable levels increased from 39 to 50 per cent.¹³ Beyond threatening species and ecosystems, declining fish stocks create negative environmental and social externalities: vessels must consume more fuel to catch the same volume of fish - raising emissions and costs - while small-scale fishers (SSF) in developing countries are forced to venture farther from shore, increasing their risks at sea.



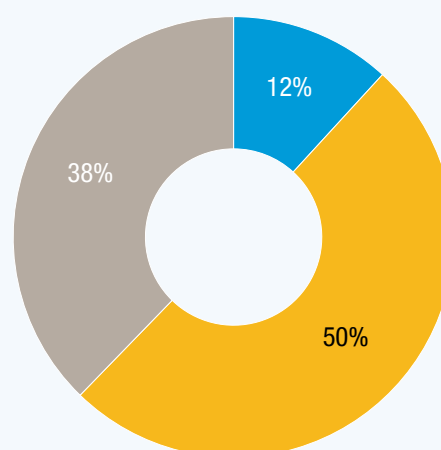
88 per cent of marine fishery stocks are overfished or maximally sustainably fished, up from 49 per cent in 1974

Percentage of fish stocks

■ Underfished ■ Maximally sustainably fished ■ Overfished



1974



2021

Source: FAO (2024).

Note: FAO defines a fish population as maximally sustainably fished when its biomass is above 80 percent but below 120 percent of the target level.

To address these challenges, countries have adopted several multilateral agreements. The WTO Fisheries Subsidies Agreement (FSA), adopted in 2022, disciplines harmful subsidies that contribute to overfishing. The Port State Measures Agreement (PSMA), which entered into force in 2009, empowers port authorities to combat Illegal, Unreported and Unregulated (IUU) fishing. In 2023, negotiations concluded on the Agreement on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction (BBNJ), also known as the High Seas Treaty, which aims to strengthen protections for marine biodiversity in international waters.

At the date of writing, the WTO FSA has been accepted by 101 economies leaving a gap of 10 economies to reach the 111 required membership (two-thirds of WTO members) to enter into force. The BBNJ has been ratified by 22 economies leaving a gap of 38 to reach the required 60 ratifications to take effect. The PSMA is currently implemented by 82 Parties, including the recent ratification by China.

¹³ FAO. 2023. SOFIA 2022 report



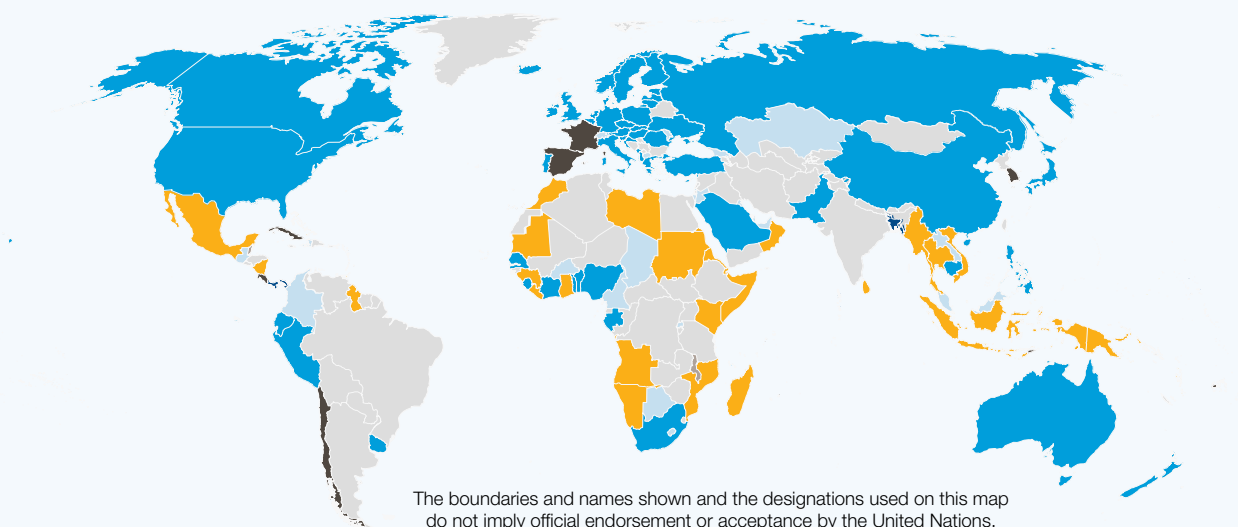
These agreements seek to fill regulatory and governance gaps by disciplining harmful incentives to stock conservation, enabling enforcement at ports, and offering legal and policy tools to manage high seas resources more effectively.



Multilateral Ocean-related international agreements need much greater political support

UN Biodiversity Beyond National Jurisdiction, WTO Fisheries Subsidies and FAO Port State Measures Agreements have low acceptance/ratification

■ ALL ■ BBNJ ■ BBNJ + PSMA ■ FSA ■ FSA + BBNJ ■ FSA + PSMA ■ PSMA



Source: UNCTAD. 2025. Based on data from the World Trade Organisation (WTO), United Nations (UN) and Food and Agriculture Organisation (FAO), and United Nations Division on the Law of the Sea (UNDOALOS).

Note: Countries may have accepted/ratified agreements after this figure was created. FSA = Agreement on Fisheries Subsidies, BBNJ = Biodiversity Beyond National Jurisdiction (High Seas Treaty), PSMA = Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing. For the PSMA, both “ratification” and “accession” are included, as accession has the same legal effect as ratification.

The variation in ratifications between these different agreements reflects differences in national priorities, enforcement capabilities and relative reliance on fisheries subsidies. To facilitate the ratification of the agreements by developing countries, technical and legal assistance is key, as well as support for the implementation of the agreement, such as capacity building to gather data, monitor fisheries, draft implementing laws, and enforce the agreements.

UNCTAD’s BioTrade Principles and Criteria (P&C) provide a framework for promoting sustainable trade and investment in biodiversity-based products and services, including those derived from marine species and ecosystems.¹⁴ The P&C emphasise conservation and the sustainable use of marine biodiversity, ensuring that the collection, production, transformation, and commercialisation of living marine resources are environmentally, socially, and economically sustainable.

¹⁴ UNCTAD. 2025. Available at: <https://unctad.org/topic/trade-and-environment/biotrade/principles-and-criteria>



Key principles include fair and equitable benefit-sharing, socioeconomic sustainability, legal compliance with national law and relevant international agreements, and respect for the rights of all actors involved. Since their introduction in 2007, the BioTrade P&C have been applied in more than 80 countries. By adhering to these P&Cs, marine BioTrade initiatives can help to sustainably use living marine resources and to conserve ecosystems while supporting the livelihoods of local communities. This was the case in a recent Blue BioTrade project, where UNCTAD supported application of the P&C in Caribbean SIDS, in partnership with the Organisation of Eastern Caribbean States (OECS) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and with the support of the European Union. The project led to the adoption of a regional Blue BioTrade Strategy on Queen Conch (a highly value Appendix II CITES listed shell-fish species), a biomass assessment and preparatory work for the building of a nursery for replenishment of the species.¹⁵

¹⁵ UNCTAD. 2025. Available at: <https://unctad.org/project/blue-biotrade-promoting-sustainable-livelihoods-and-conservation-marine-biodiversity>



Plastic pollution

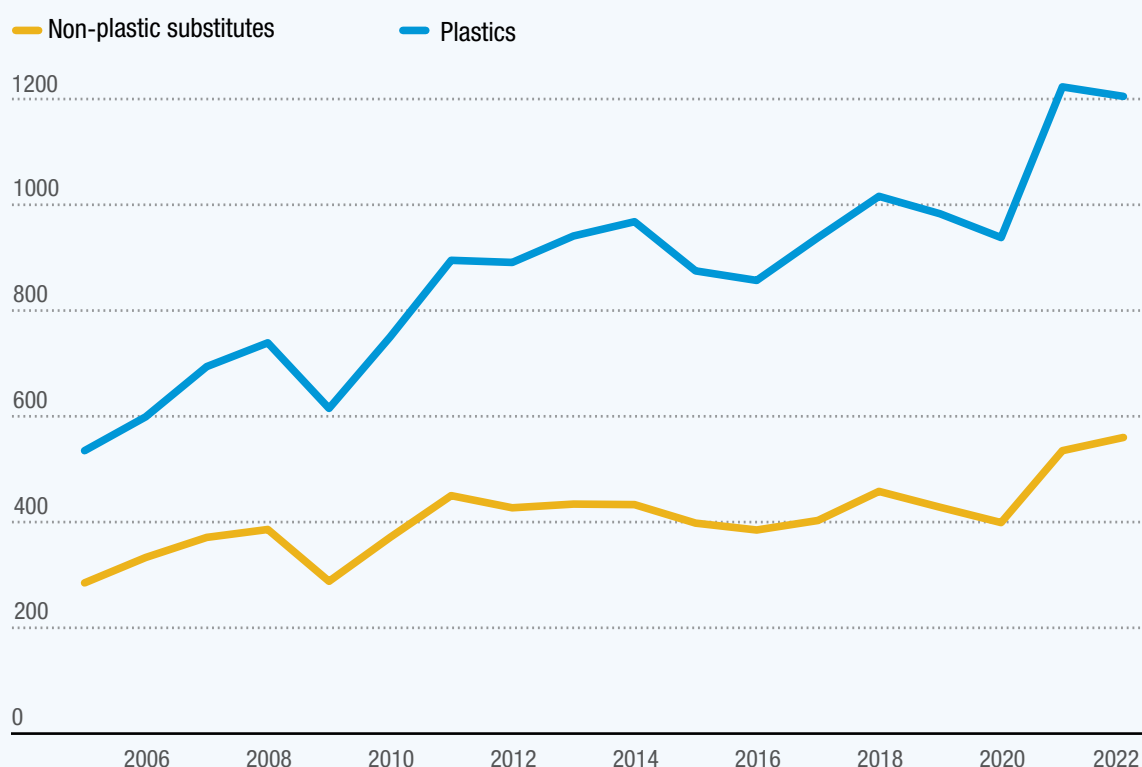
Plastics make up around 80 per cent of ocean pollution.¹⁶ An estimated 75 to 199 million tonnes of plastic are already present in the ocean, with an additional 8 to 10 million tonnes entering each year.¹⁷ From large garbage patches to microplastics, this pollution poses serious threats to marine ecosystems and human health, with microplastics increasingly found in fish.

Despite these risks, exports of plastic materials and plastic-based goods reached a record \$1.2 trillion in 2022, accounting for nearly 4 per cent of global trade. International negotiations are underway through the Intergovernmental Negotiating Committee on Plastic Pollution (INC), which is developing a legally binding instrument to address plastic pollution, including its impact on the marine environment.



The traded value of plastics and non-plastic substitutes shows a consistent upward trend

Global exports in plastic and non-plastic substitutes, billion of dollars, 2005–2022



Source: UNCTAD. 2025. UN Trade in Goods Database.

Note: 2022 data may reflect fewer reporting countries.

Non-plastic substitutes such as natural fibres, biomaterials, and glass can help reduce dependence on plastic. Global trade in these substitutes reached \$560 billion in 2022, growing 30 per cent faster than plastic trade between 2005 and 2022. Developing economies accounted for 42 per cent of these exports.

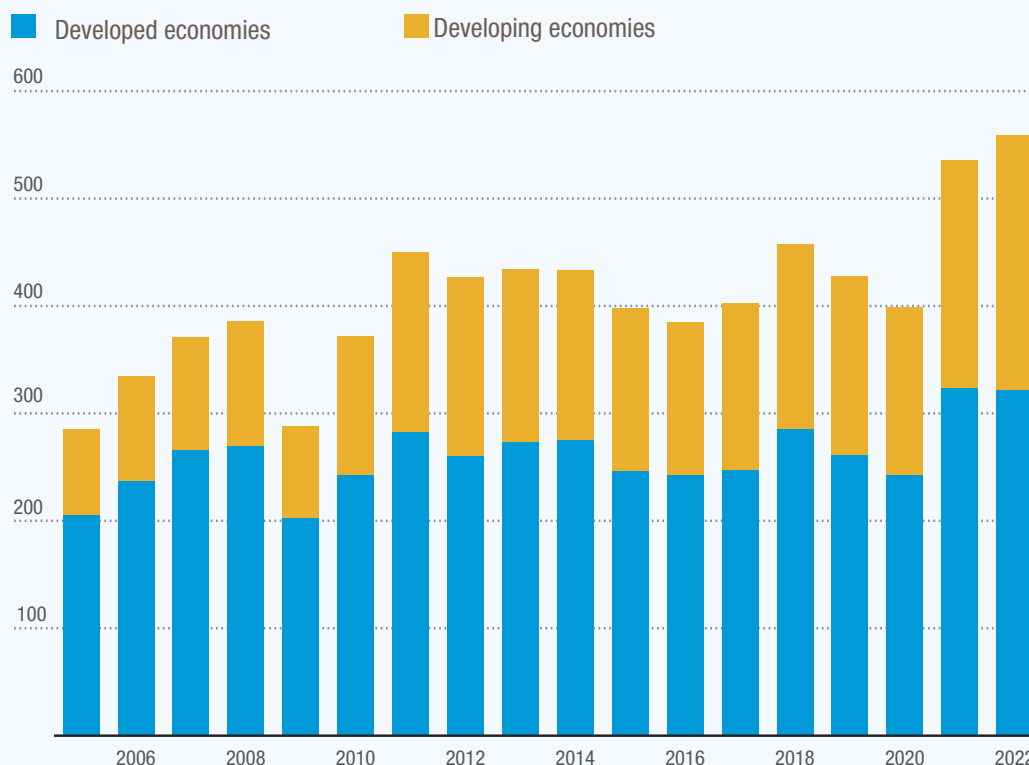
¹⁶ UNESCO. 2025. Available at: <https://oceanliteracy.unesco.org/plastic-pollution-ocean/>

¹⁷ UNEP. 2025. Available at: <https://www.unep.org/topics/ocean-seas-and-coasts/ecosystem-degradation-pollution/plastic-pollution-marine-litter>



Developing economies account for 42 per cent of non-plastic substitutes exports

Global exports in non-plastic substitutes by development status, in billion \$, 2005–2022

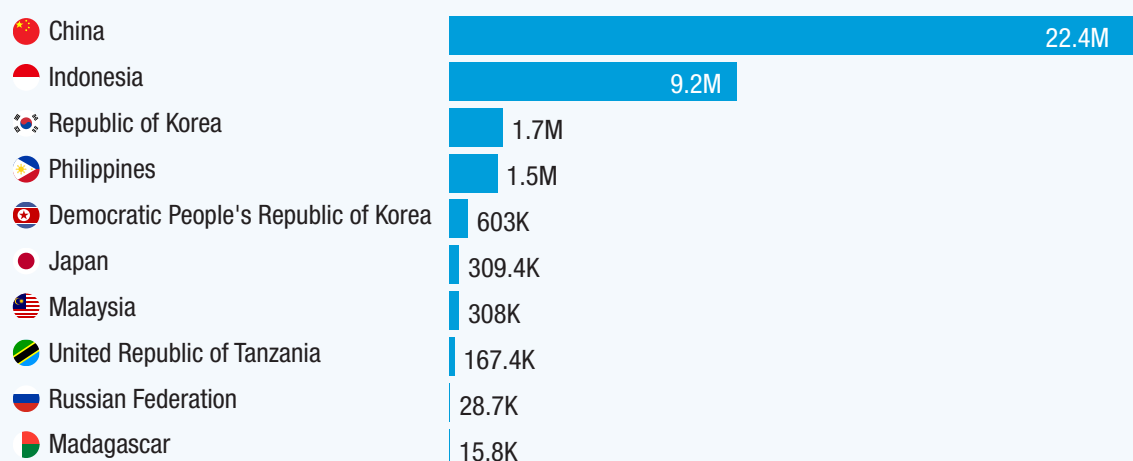


Source: UNCTAD. 2025. Ocean Trade in Goods Database.

Seaweed can be transformed into a substitute to plastic, such as food packaging. Over the past two decades, the global seaweed industry has tripled in size and doubled in value, reaching more than 36.3 million tonnes (wet weight). Today, seaweed accounts for half of global marine aquaculture production by volume. Trade in seaweed and other algae, whether fit for human consumption (HS 121221) or other uses (HS 121229), nearly doubled between 2012 and 2022, rising from \$677 million to \$1.2 billion.

China and Indonesia generated 87 per cent of global seaweed production in 2022

Top 10 seaweed-producing countries by production volume, in tonnes (live weight), 2022



Source: FAO. 2025. FishStat database.

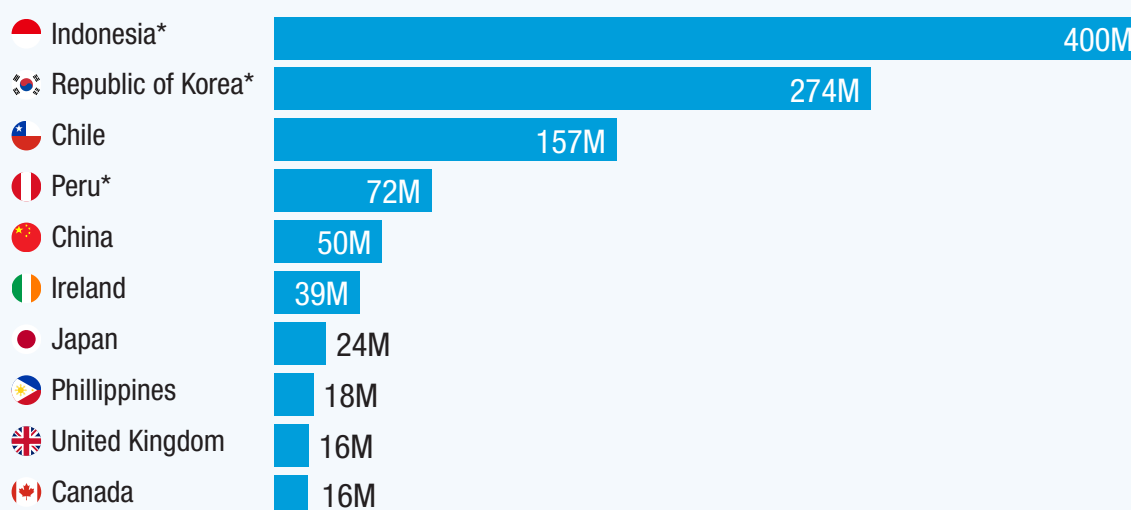
In 2022, China led global seaweed production with 22.4 million tonnes, followed by Indonesia with 9.2 million tonnes. In terms of exports, Indonesia and the Republic of Korea lead, together accounting for 56 per cent of global exports. Chile and Peru also play key roles in trade despite lower production levels, reflecting export-oriented strategies and limited domestic use.

The seaweed sector remains underdeveloped and underregulated, facing several challenges including limited support, weak coordination, lack of standardisation, and the absence of dedicated governance, all of which constrain its contribution to the Sustainable Development Goals (SDGs).



Global seaweed trade was driven by Indonesia and the Republic of Korea in 2023

Top 10 exporters of aquatic plants, seaweeds and other algae in 2023, million \$



Source: UNCTAD. 2025. Ocean Trade in Goods Database.

Note: *2022 data used for countries without 2023 data.

Given the rapid growth of seaweed production and trade, the co-chairs of the 5th UN Ocean Forum (2025)¹⁸ proposed the creation of a UN Seaweed Task Force. This task force would coordinate efforts to maximize support for sustainable and equitable production, trade, and multiple uses of seaweed. It will also aim to identify scientific and regulatory gaps, assist in collecting and analyzing seaweed data and avoid duplication of efforts.

¹⁸ See: <https://unctad.org/system/files/information-document/5unof-chairs-summary-format-v-final-rev.pdf>



Climate change

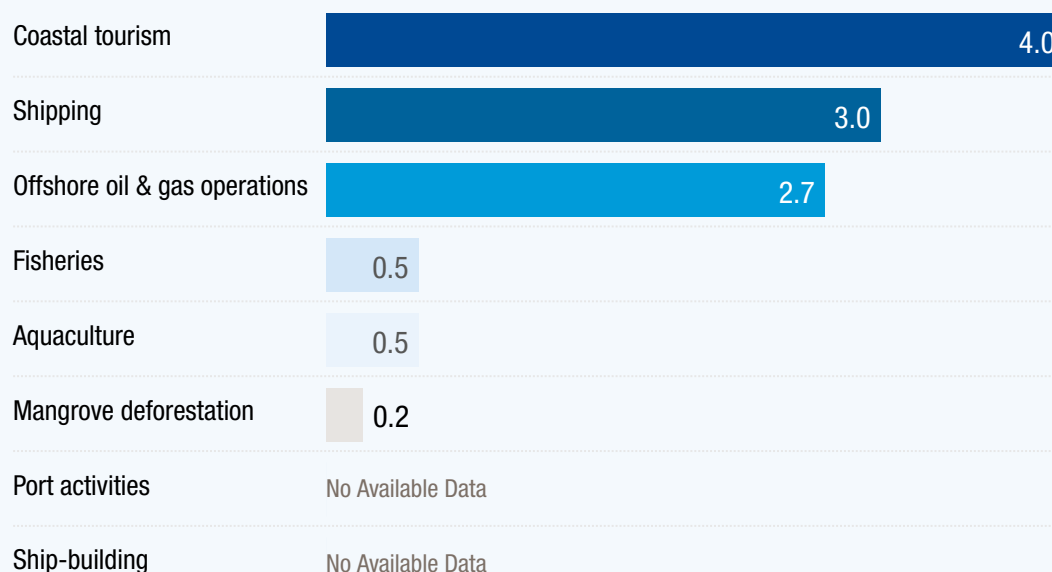


The ocean economy is estimated to contribute to at least 11 per cent of global greenhouse gas (GHG) emissions.¹⁹ Coastal and marine tourism alone account for 4 per cent of GHG emissions, followed by shipping at 3 per cent. The GHG contribution of other maritime transport, such as port activities and shipbuilding, remains under-researched due to limited emissions data.



The ocean economy contributes to at least 11 per cent of global greenhouse gas (GHG) emissions

Percentage %



Source: UNCTAD. 2025. Calculations based on UNCTAD (2024), High Level Panel for a Sustainable Ocean Economy (2022), FAO (2021), Donato et al., (2011), MacLeod et al. (2020), IEA (2024), Statista (2024).

Note: All are latest estimates available.

As a response, UNCTAD and the UN Department of Economic and Social Affairs (DESA) are launching a project to develop more precise tools for estimating GHG emissions from shipping and fisheries.²⁰ The research will draw on Automatic Identification System (AIS)²¹ and fuel consumption data, along with other shipping datasets, and will apply artificial intelligence (AI) for analysis.

Policy frameworks are also evolving. For example, the 2023 IMO Strategy on the Reduction of GHG Emissions from Ships²² sets a vision to achieve net-zero emissions by around 2050, with interim targets of at least 20 per cent GHG reduction by 2030 and 70 per cent by 2040. It also calls for zero or near-zero emission fuels to make up at least 5 per cent of maritime energy use by 2030. Meeting these targets will require significant investment, technology transfer and support for developing economies, particularly LDCs and SIDS.

¹⁹ UNCTAD. 2025. Calculations based on UNCTAD (2024), High Level Panel for a Sustainable Ocean Economy (2022), FAO (2021), Donato et al., (2011), MacLeod et al. (2020), IEA (2024), Statista (2024).

²⁰ The project will be piloted in four Caribbean SIDS: Barbados, Belize, the Dominican Republic, and Trinidad and Tobago - with the support of UNEP, CARICOM, and ECLAC. In addition to new measurement tools, the initiative will provide policy recommendations for decarbonisation and guidance for broader application.

²¹ AIS is a tracking system used on ships and by vessel traffic services to identify and locate vessels.

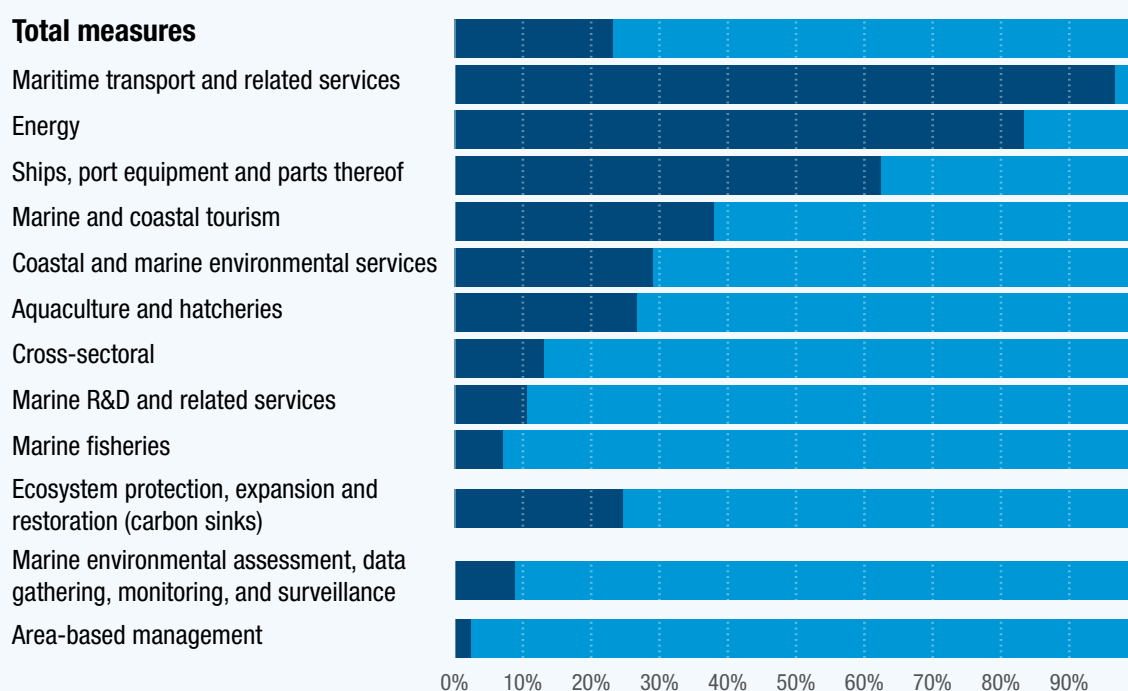
²² IMO. 2023. See: <https://www.wcdn.imo.org/localresources/en/OurWork/Environment/Documents/annex/MEPC%2080/Annex%2015.pdf>



At the national level, updates to Nationally Determined Contributions (NDCs) - central to the implementation of the Paris Agreement - reflect the growing integration of ocean-based climate action, especially among SIDS. UNCTAD'S 2024 analysis identified 606 ocean-related measures across 39 SIDS' NDCs.²³ Of these, 77 per cent focus on adaptation - including ecosystem resilience, coastal infrastructure and economic stability - while 23 per cent support mitigation efforts in areas such as renewable energy, maritime transport and port operations.

➤ 77 per cent of ocean-related measures in SIDS' NDCs focus on adaptation

■ Mitigation ■ Adaptation



Source: UNCTAD's analysis (2024) based on UNFCCC's NDC Registry.

Note: SIDS: Small Island Developing States, NDCs: Nationally Determined Contributions.

There is significant potential to better align climate resilience with trade, as only 7 per cent of ocean-related NDC measures explicitly reference trade-related tools such as tariffs, non-tariff measures, trade facilitation, or blue industrial policies, despite ocean-based goods and services exports contributing 16 per cent to SIDS' GDP in 2022 - equivalent to \$160 billion. Another 30 per cent of measures are implicitly trade-related.²⁴ Achieving stronger alignment will require increased technical support, climate finance, and stronger policy coordination across trade and environment portfolios as indicated in the Guide for Policy makers.²⁵

²³ UNCTAD. 2024. A deep dive into ocean-related measures in the nationally determined contributions of small island developing States.

²⁴ Implicit trade-related measures cover, for example, measures pursuing broader objectives relating to countries' insertion into the global economy such as promoting economic diversification, connectivity, the incorporation of ocean economic policies or increasing renewable energy production. See UNCTAD. 2024. A deep dive into ocean-related measures in the nationally determined contributions of small island developing States. https://unctad.org/system/files/official-document/ditcted2024d2_en.pdf

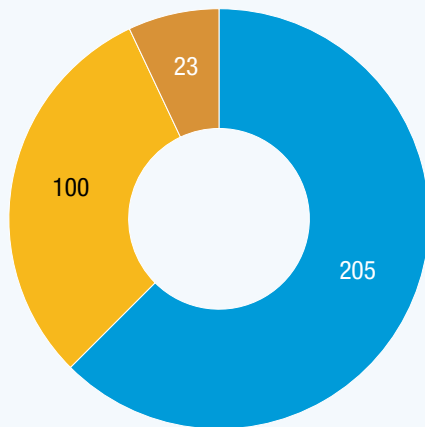
²⁵ See <https://unctad.org/publication/trade-and-investment-policies-advance-national-climate-plans-draft-guides-policy-makers>



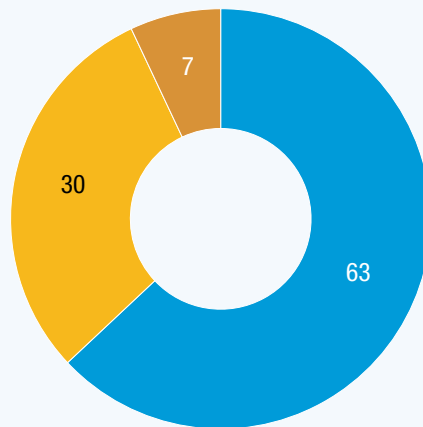
Trade is key to climate change adaptation and mitigation for Small Island Developing States

But only 37 per cent of ocean-related measures are trade-related

■ Non trade-related measures ■ Trade-related measures - Implicit ■ Trade-related measures - Explicit



Number of measures



Percentage

Source: UNCTAD's analysis (2024) based on UNFCCC's NDC Registry.

Note: SIDS: Small Island Developing States; NDCs: Nationally Determined Contributions.





Deep-sea mining

The green transition, growing energy needs and the digital economy are driving growing demand for metals and minerals. Geopolitical interest in access to critical minerals is renewing governmental and corporate interest in deep-sea mining. Several nations have indicated intentions to move beyond the exploratory phase and begin operations within their exclusive economic zones, extended continental shelves and even in the “Area”.²⁶ The International Seabed Authority (ISA) —the international body responsible for regulating seabed exploration and exploitation— has so far granted 31 contracts to 22 contractors for the exploration of polymetallic nodules, polymetallic sulphides, and cobalt-rich ferromanganese crusts in areas beyond national jurisdiction.²⁷ However, no commercial exploitation contract has been approved, as the regulations governing DSM are still under development.²⁸

The debate over whether countries and companies should pursue commercial deep-sea mining remains intense and ongoing. Some proponents argue that deep-sea mining can offer significant economic potential, a solution to the increasing demand for critical minerals and presents fewer environmental challenges than terrestrial mining.²⁹ Conversely, some opponents contend that its environmental and social impacts could be severe and irreversible.³⁰ As a whole, DSM is likely to significantly affect the delicate ecosystems and the services they provide, including provisioning, supporting, regulating environmental and cultural services.³¹ Furthermore, DSM poses today risks of serious harm to marine species and ecosystems over large areas surrounding prospective mining sites³², as well as concerns over the release of sand particles and carbon dioxide stored in the seabed.

Considering these concerns, ISA members may need to carefully weigh scientific, economic, and environmental uncertainties and agree on a sound “DSM code” before authorising any commercial-scale operations. As of now, around 21 countries support the idea of a ban, moratorium or precautionary pause on DSM until its potential impact is better understood.³³

²⁶ According to Article 1(1) of UNCLOS, the “Area” means the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction.

²⁷ ISA (2024). See: <https://www.isa.org.jm/exploration-contracts/>

²⁸ ISA (2024). The role of the ISA in regulating the exploration and exploitation of deep-seabed resources outside of national jurisdiction. See: <https://www.isa.org.jm/faq-for-media/>

²⁹ Verma (2024). Deep Sea Mining: Balancing Opportunities and Challenges for Sustainable Resource Extraction. International Journal of Trend in Scientific Research and Development (IJTSRD). See: <https://www.ijtsrd.com/papers/ijtsrd67180.pdf#:~:text=Compared%20to%20traditional%20mining%2C%20deep%20sea%20mining%20can,environmental%20footprints%20through%20advanced%20AI%20and%20robotic%20technologies>

³⁰ Alam, Pradhoshini, Flint, and Sumaila (2025). Deep-sea mining and its risks for social-ecological systems: Insights from simulation-based analyses. University of British Columbia. See: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0320888>

³¹ Ibidis.

³² Brown (2025). Environmental risk weighs heavily on the possible rewards of deep-sea mining. See: <https://www.atlanticcouncil.org/blogs/energysource/environmental-risk-weighs-heavily-on-the-possible-rewards-of-deep-sea-mining/>

³³ Euro news (2023). Deep sea mining: Here’s which countries oppose and support the controversial practice. See: <https://www.euronews.com/green/2023/08/02/deep-sea-mining-heres-which-countries-oppose-and-support-the-controversial-practice>





The 5th Ocean Forum was held in Geneva in March 2024, coordinated by UNCTAD and partners. It was a unique platform for dialogue, peer and expert exchanges, and consensus-building on the implementation of trade-related aspects of SDG 14. The forum gathered over 500 participants from 80 countries over three days, including ministers, ambassadors, delegates, UN entities, international organizations, businesses and startups, the youth and civil society actors over three days.

To advance a sustainable ocean economy, the UN Ocean Forum recommends a comprehensive road map across five key areas:

- 1 Improving ocean governance and related ocean trade and economic data, early warning and risk monitoring;**
- 2 Enhancing climate mitigation and resilience through better emissions tracking, climate-adaptive infrastructure, and support for vulnerable countries;**
- 3 Promoting sustainable trade, market access and south-south cooperation, particularly for small-scale fishers and developing nations;**
- 4 Fostering innovation in marine-based products and eco-friendly business environments; and**
- 5 Expanding sources of blue finance through mechanisms like a Blue Deal and a One Ocean Finance Facility, while reforming harmful subsidies.**

Collectively, these efforts seek to address a range of challenges and risks that may impede future growth, while fostering informed policymaking and creating opportunities for sustainable resource use, diversified trade, resilient infrastructure, and enhanced global cooperation — from Geneva to the Third United Nations Ocean Conference in Nice, France, in June 2025.



15

Recommendations from the Ocean Forum to the Ocean Conference: from Geneva to Nice

OCEAN ECONOMY, GOVERNANCE & MONITORING

1 PROVIDE OCEAN DATA FOR INFORMED POLICY



Improve data and indicators on ocean trade for sustainable decision-making

2 STRENGTHEN GLOBAL OCEAN GOVERNANCE



Accelerate ratification and implementation of key ocean economy-related agreements

3 IMPROVE MONITORING AND RISK REDUCTION



Expand early warning systems to address risks from extreme weather events

CLIMATE MITIGATION, RESILIENCE & ADAPTATION

4 TRACK OCEAN SECTOR EMISSIONS



Enhance data systems to measure carbon emissions from ocean-based industries, particularly for maritime transport and fisheries

5 EMPOWER DEVELOPING COUNTRIES FOR CLIMATE ACTION



Support Small Island Developing States and Least Developed Countries in climate-resilient ocean trade

6 ENSURE RESILIENT AND LOW-CARBON MARITIME TRANSPORT, PORTS AND LOGISTICS



Build adaptive and sustainable infrastructure for ocean trade

SUSTAINABLE TRADE & MARKET ACCESS

7 BOOST OCEAN TRADE BETWEEN DEVELOPING COUNTRIES



Facilitate new trade negotiations for ocean product market access

8 HELP SMALL-SCALE FISHERS REACH MORE MARKETS



Address tariff and non-tariff trade barriers to improve market access

9 DRIVE SUSTAINABLE FISHERIES THROUGH TECHNOLOGY AND COOPERATION



Innovate to enhance transparency and traceability

INNOVATION & MARINE-BASED PRODUCTS

10 PROMOTE INNOVATIVE MARINE-BASED PRODUCTS



Support sustainable product development, compliant with scientific evidence and access and benefit-sharing principles

11 MAKE TRADE EASIER FOR BLUE BUSINESS



Create enabling conditions for eco-friendly ocean products

12 ESTABLISH GLOBAL SUPPORT FOR SEAWEED AND BIOMATERIALS



Set up a United Nations Seaweed Task Force and a Technical Advisory Body on sustainable biomaterials

BLUE FINANCE

13 MOBILISE FINANCE FOR A SUSTAINABLE OCEAN ECONOMY



Launch a Blue Deal to close the ocean finance gap

14 CREATE A ONE OCEAN FINANCE FACILITY



Explore a UN-led financial mechanism for sustainable ocean economies

15 REFORM SUBSIDIES TO SUPPORT OCEAN SUSTAINABILITY



Redirect harmful subsidies toward socio-environmental solutions

Through this publication,
UNCTAD provides valuable insights into
current and emerging trade policy
issues and their impact
on economic development in a fast
changing global trade context.

