2 Multi-level governance of the blue economy: The state of play and challenges

This chapter provides an overview of the governance of the blue economy at the national and subnational levels, looking into the institutional framework and tools (including planning, regulation, economic incentives, funding, capacity building, awareness raising, and data and information) for blue economy policy, as well as dedicated national and subnational blue economy strategies, plans and policies.

Who does what for the blue economy across levels of government

Blue economy policy is a shared responsibility across levels of government. Although there is no one-size-fits-all model across countries, national governments tend to have more responsibilities in blue economy sectors deemed strategic for national security interests, such as freshwater and marine fisheries, offshore wind and tidal energy, shipping, port activities, shipbuilding and naval activities, which relate to food security, energy security, trade and defence. Subnational governments tend to have greater prerogative in water-based passenger transport (e.g. ferries, water buses and taxis) and tourism due to their competencies in public transport, tourism affairs and local economic development (OECD, 2022[1]). Several levels of government are often involved in each sector: for example, in the city of New Orleans, United States, commercial and recreational fishing are governed by both state and federal laws and agencies, particularly the National Oceanic and Atmospheric Administration, the United States Fish and Wildlife Service and the Louisiana Department of Wildlife and Fisheries; additional regulatory decisions (e.g. business permits and recreational fishing licensing) are made by other state agencies. The state of Louisiana manages offshore wind energy leases in Louisiana waters that extend three nautical miles from its coastline and by the federal Bureau of Ocean Energy Management beyond that limit.

Cities and regions are responsible for cross-cutting policies and investments that affect blue economy sectors and ecosystems. Subnational governments often have competencies for urban and regional planning, water and sanitation, waste management and climate resilience that can affect the level of water security and quality, and, thus, the blue economy. For instance, land use practices can have impacts on freshwater, coastal and marine ecosystems (e.g. wetlands and mangroves) and the ecosystem services they provide (e.g. flood mitigation and carbon capture). Similarly, subnational governments have overarching competencies in local and regional economic development, tourism and innovation, which can affect blue economy sectors in terms of added value, jobs, productivity and competitiveness. Subnational governments also play a central role in addressing the environmental impacts of the blue economy, accounting for 63% of total climate-significant public expenditure and 69% of climate-significant public investment across 33 OECD and European Union (EU) countries in 2019 (OECD, 2022[2]).

Blue economy-related policies at national level are usually led by ministries or departments in charge of maritime or foreign affairs, economy, planning and transport. For example, the Philippine Maritime Administration, the Ministry of Foreign Affairs of Panama, the Ministry of Economy and Finance of Morocco, the National Planning Department of Colombia and the United Kingdom (UK) Department for Transport are responsible for national blue economy strategies. Some countries, such as France, Mauritius and Portugal, have dedicated ministries or state secretariats for the blue economy, as well as the sea and maritime affairs. At the subnational level, maritime or economic departments tend to take the lead. For example, the French region of Guadeloupe has a Directorate of the Sea (*Direction de la mer*) that depends on the prefect, a national government representative at the subnational level. The directorate is responsible for leading national policies relating to the sustainable development of the sea, managing marine resources, regulating maritime activities and co-ordinating regulatory policies for coastal and marine activities, excluding those relating to national defence and security and foreign trade. In the city of Lisbon, Portugal, blue economy policy is led by the Department of Innovation and Strategic Sectors, which is notably the lead institution for the city's Sea Hub (*Hub do Mar*), an initiative replicated in six other Portuguese cities as part of a national strategy for blue hubs within the EU-funded Portuguese Recovery and Resilience Plan (2021). The Office of Economic Development leads blue economy initiatives in the city of New Orleans, United States. In other cases, blue economy policy can be a shared responsibility across subnational government departments. In the region of Rio de Janeiro, Brazil, blue economy policy is led by the Department for Energy and the Marine Economy in co-operation with the Department of Environment and Sustainability and the Department for Agriculture, Livestock, Fisheries and Supply, who co-ordinate on a regular basis through working meetings.

To facilitate co-ordination across levels of government, national governments can set out contracts, deals or agreements to achieve specific goals with subnational governments. For example, the United States addresses water risks with “compacts” or agreements, such as the Colorado River Compact, focusing on water quantity, the Great Lakes Compact, seeking to ensure adequate water quality and avoid water diversion from the Lakes to other watersheds and the Chesapeake Bay Watershed Agreement on water quality and quantity to maintain fisheries and recreational activities.

In some cases, subnational governments have set up co-ordination mechanisms to engage with non-governmental blue economy players on a regular basis. For example, the Nautical Committee of the city of Salvador, Brazil, brings together members of public and private initiatives to foster nautical tourism in the city. In the Occitanie region of France, the Parliament of the Sea (*Parlement de la mer*), chaired by the region’s vice-president in charge of the Mediterranean Sea, federates and represents the regional maritime community. It brings projects and new ideas to the fore, encourages and organises dialogue, debate and mutual understanding, and lobbies national and European authorities. In Portugal, the national government designated the Ocean Forum as the entity responsible for the creation of the network of Sea Hubs (*Hub Azul*) in co-ordination with local governments and port authorities. In countries where they exist, river basin organisations (RBOs) offer a permanent stakeholder engagement mechanism on water issues. For example, the Seine-Normandie Basin Committee in France gathers representatives of national and subnational governments as well as stakeholders related to freshwater and marine environments. As a consultation body, it allows its 185 members to debate and reach a consensus on the main orientations of local water policy.

A number of sector-specific actors, such as port authorities, also play a role. National governments own most of the world’s 50 largest ports but over one-third are fully or partly owned by local governments (ITF, 2017[3]). According to the OECD Global Survey on Localising the Blue Economy (hereafter the OECD survey), for example, the Antwerp Port Authority, Belgium, is an independent, municipally-owned company, while the Port of Los Angeles in the United States is a city department and is governed by the Los Angeles Board of Harbor Commissioners, a panel appointed by the mayor. The port generates its own revenues from leasing and shipping service fees and is not supported by city taxes. Most countries have a hybrid model where some ports are owned jointly and others individually by national and subnational governments, depending on the categories of ports. For example, the region of Nouvelle-Aquitaine, France, is home to two state-owned ports (Bordeaux and La Rochelle), one port owned by the regional government (Bayonne) and another (Rochefort Tonnay-Charente) owned by the county (*département)* of Charente-Maritime. The regional government financially supports all three subnational ports. Beyond questions of ownership, local authorities generally participate in some form of representation in port authorities’ decision-making bodies. They are typically involved in appointing port presidents and board members, approving budgets and defining long-term strategy. In many ports, non-governmental stakeholders such as port users or chambers of commerce are also included in the decision-making bodies of port authorities (ITF, 2017[3]).

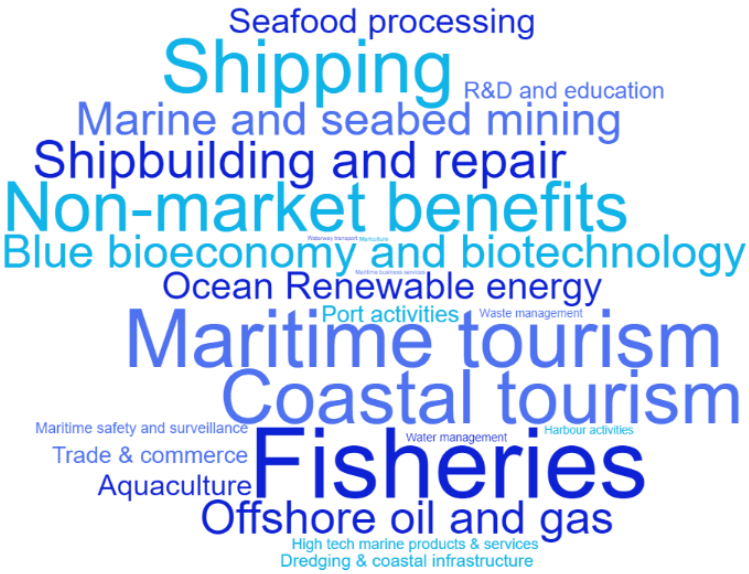
Publicly owned companies and agencies manage natural resources related to the blue economy. With the objective of ensuring food security, national governments tend to play an important role in managing fisheries. In Portugal, the state-owned company Docapesca, under the supervision of the Ministry of Agriculture and Food, is responsible for providing the public service of first sale of fish and for supporting the fisheries sector and its ports. In Mauritania, the National Fish Distribution Company (SNDP), supervised by the Ministry of Fisheries and Maritime Economy and the Ministry of Finance, aims to take advantage of the country’s fishery resources and combat malnutrition by distributing subsidised fish (up to 82% of the price) to the most remote regions of the country. National governments can also lead modernisation efforts for fishing fleets through publicly owned shipbuilding companies, such as Shipyards of Mauritania (*Chantiers Navals de Mauritanie*) or the ship repair infrastructure company (SIRN) of Senegal.

Blue economy strategies across levels of government

National blue economy strategies

A growing number of national governments have defined long-term visions for the blue economy as part of dedicated blue economy strategies, sectoral blue economy strategies or other strategies that include the blue economy. Out of the 41 countries represented in the OECD survey, 21 have developed or are preparing a dedicated strategy, policy, plan, roadmap, programme or law on the blue economy (Table 2.1). The most prominently featured sectors include fisheries, shipping and tourism and, in some cases, they refer to non-market benefits of the blue economy, such as carbon sequestration and coastal resilience (Figure 2.1). The timeframe of strategies varies, from 5 years in the United States to 22 years in Indonesia, with regular updates in some cases (e.g. every 5 years in Japan or 6 years in France). In some cases, blue economy strategies are given statutory status as part of laws on maritime policy (e.g. France and Japan) or enacted by regulatory decrees (e.g. Brazil, Panama and Peru). For example, in Japan, the Basic Act on Ocean Policy (Act No. 33 of 2007), enacted in July 2007, has led to the approval of the First Basic Plan on Ocean Policy (2008) as well as the two subsequent iterations (2013 and 2018). Sector-specific strategies may refer, for example, to fisheries (Kenya Fisheries Strategic Plan, 2023-2027), energy (US Powering the Blue Economy strategy, 2019) or shipping (Canada's National Shipbuilding Procurement Strategy, 2010). The blue economy can also be part of broader national strategies. For instance, China's 14th Five-Year Plan for National Economic and Social Development 2021-2025 promotes a sustainable marine economy and active global marine governance through a "blue partnership" with other coastal countries.

Figure 2.1. Blue economy sectors and non-market benefits included in national strategies



Note: This word cloud is based on the blue economy sectors and non-market benefits listed in the 21 national blue economy strategies analysed. The more frequently a word appears in the strategies, the larger it is in the visualisation. "Fisheries" is the most prevalent sector across the strategies (mentioned in 17 strategies), followed by maritime tourism (14) and coastal tourism (13).

Over the past few years, the international community has increasingly recognised the need for a sustainable blue economy, protecting and conserving coastal and marine ecosystems. As a result, a series of guiding principles for a sustainable blue economy, statements of intent or declarations and international treaties have been developed (Box 2.1).

Box 2.1. International principles, declarations and statements relative to the blue economy

Guiding principles

- The United Nations (UN) Sustainable Development Goal (SDG) 14 on Life below water (2015-30) to conserve and sustainably use the oceans, seas and marine resources (UN, 2015[4]).
- The United Nations Environment Programme Finance Initiative (UNEP-FI) Sustainable Blue Economy Finance Principles (2018[5]) to guide responsible investment in the blue economy.
- The Association of Southeast Asian Nations (ASEAN) Blue Economy Framework (2023[6]) to create value-added and a value chain of resources from oceans, seas and freshwater.
- The Chennai High-Level Principles on Sustainable and Resilient Blue/Ocean-based Economy (2023[7]), adopted by members of the Group of 20 (G20), which address marine pollution and biodiversity loss.

Statements of intent or declarations

- The Jakarta Declaration on Blue Economy (2017[8]) to harness oceans and maritime resources to drive economic growth, job creation and innovation.
- The Nairobi Statement of Intent on Advancing the Global Sustainable Blue Economy (2018[9]) to advance the principles of a sustainable blue economy on a global scale.
- The 'Blue' COP25 Declaration on Ocean and Climate (2019[10]), which recognises the ocean as a fundamental part of the climate system.
- The ASEAN Leaders' Declaration on the Blue Economy (2021[11]) to promote sustainable and inclusive economic growth in the maritime and marine sectors.
- The Union for the Mediterranean (UfM) Ministerial Declaration on Sustainable Blue Economy (2021[12]), which serves as a catalyst for the development of sustainable blue economy projects in the Mediterranean.
- The Communication on a New Approach for a Sustainable Blue Economy in the European Union (2021[13]) to facilitate the transition to a sustainable blue economy in the union and set measures to strengthen ocean protection.
- The COP28 Dubai Ocean Declaration (2023[14]), which calls on world leaders to intensify efforts in enhancing global ocean observations for improved understanding of natural and anthropogenic changes as well as for better planning of climate mitigation and adaptation strategies.

International treaties

- The ongoing meetings of the Intergovernmental Negotiating Committee, established to develop an international legally binding instrument on plastic pollution, including in the marine environment, under the auspices of the United Nations (2022-24) (UNEP, 2023[15]).
- The Treaty on the High Seas (2023[16]) adopted by the UN General Assembly's Intergovernmental Conference on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, also known as the BBNJ treaty.

Source: Based on box citations.

Table 2.1. Overview of national blue economy strategies

Country	Name	Year	Lead institution(s)	Objective(s)
Brazil	Brazil's National Maritime Policy and Decree No. 1.265 of 11 October 1994	1994 2021 (update)	Presidency of the Brazilian Republic	Guide the development of the country's maritime activities in an integrated way while achieving an effective, rational and full use of the sea and inland waterways.
Cambodia	Building a Blue Economy Roadmap for Cambodia	2023	Royal Government of Cambodia and World Bank	Support the transition towards a sustainable blue economy in which marine and coastal ecosystems are safeguarded while providing economic growth, improved livelihoods and jobs to coastal communities.
Canada	Engaging on Canada's Blue Economy Strategy (engagement report)	2022	Ministry of Fisheries, Oceans and the Canadian Coast Guard	Enable the country to grow its ocean economy in order to create jobs and opportunities for coastal communities while advancing conservation objectives. This report will guide the development of the final blue economy strategy.
Colombia	Colombia Sustainable Bio-Oceanic Power 2030	2020	National Planning Department and Colombian Ocean Commission	Position Colombia as a "bio-oceanic power" by 2030 through the integral and sustainable use of its strategic location, oceanic conditions and natural resources to contribute to the country's growth and sustainable development.
Finland	Finland's Strategy for the Baltic Sea Region	2017	Prime Minister's Office	Promote the Baltic Sea's good environmental status, safety and security and sustainable development, improve its competitiveness and ensure the country's prosperity.
France	National Strategy for the Sea and Coast 2030 and Law no. 2016-816 of 20 June 2016 for the Blue Economy	2017 2023 (update)	Ministry of Ecological Transition and Solidarity and Ministry of the Sea	Ensure the resilience of maritime and coastal territories and ecosystems, foster the well-being of maritime and coastal actors, support the competitiveness of the blue economy and provide means for achieving carbon neutrality by 2050.
Indonesia	Indonesia Blue Economy Roadmap 2023-2045	2023	Ministry of National Development Planning and National Development Planning Agency	Enhance the welfare of people in coastal areas and small islands, promote competitive marine economic and industrial growth, and protect the marine environment.
Japan	Third Basic Plan on Ocean Policy and the Basic Act on Ocean Policy (Act no. 33 of 2007)	2008 2013 2018 (update)	National Ocean Policy Secretariat	Fulfil the country's national interests by managing oceans comprehensively, promoting environmental protection and pursuing sustainable development through improved ocean science, technology and knowledge.
Mauritius	The Ocean Economy in Mauritius (study)	2017	Ministry of Blue Economy, Marine Resources, Fisheries and Shipping and World Bank	Assess the ocean economy's potential for the country's development and identify key challenges to ensure long-term sustainability, with a focus on environmental and climate change issues. This study is supporting the development of an ocean economy strategy.
Morocco	Blue Economy Program for Results (*Programme pour les résultats de l'économie bleue*)	2022	Ministry of Economy and Finance	Strengthen the country's institutional and financial framework for the sustainable development of coastal and marine activities. This programme is supporting the development of a national blue economy strategy.
Netherlands	Dutch Maritime Strategy 2015-2025	2015	Ministry of Infrastructure and Water Management	Position the country as an international leading sustainable maritime economy, achieved through co-operation between the national government and the maritime cluster, grounded in a mutually shared maritime strategy.
Norway	Blue Opportunities: The Norwegian Government's updated ocean strategy	2019	Ministry of Trade, Industry and Fisheries	Strengthen the country's maritime sector on the global stage by ensuring the international transport of raw materials and goods and securing access to maritime infrastructure.

Country	Name	Year	Lead institution(s)	Objective(s)
Panama	National Oceans Policy, Strategy and National Action Plan and Executive Decree no. 27 of 15 May 2022	2022	Ministry of Foreign Affairs and National Oceans Policy Commission	Serve national interests by promoting the peaceful use of oceans, co-ordinating multisectoral activities to benefit the population while ensuring the well-being and conservation of the marine environment.
Peru	Peru's National Maritime Policy 2019-2030 and Supreme Decree no. 012-2019-DE	2019	Multisectoral Commission for State Action in the Maritime Sphere	Establish a framework that can guide the planning of maritime activities in a sustainable manner for social and economic development.
Philippines	Philippine Maritime Strategy 2020-2024	2020	Philippine Maritime Administration	Establish the country as a leading maritime nation, prioritising maritime safety and preservation of the marine environment.
Portugal	National Strategy for the Sea 2021-2030 (*Estratégia Nacional para o Mar 2021-2030)*	2021	Ministry of the Sea	Boost the maritime contribution to Portugal's economy, prosperity and well-being, addressing challenges of the decade and strengthening its position as a maritime nation.
Seychelles	Seychelles Blue Economy Strategic Framework and Roadmap (2018-2030)	2018	Government of the Seychelles	Foster a blue economy by unlocking the nation's development potential through innovation and knowledge while safeguarding the marine environment and heritage for future generations.
South Africa	Operation Phakisa: Oceans Economy Programme	2014	Government of South Africa	Develop a comprehensive ocean governance framework for sustainable growth of the ocean economy to maximise socio-economic benefits while ensuring adequate ocean environmental protection.
Tunisia	The Blue Economy in Tunisia: Strategic framework (*L'économie bleue en Tunisie : Éléments de cadrage stratégique*)	2023	Ministry of Environment, General Secretariat for Maritime Affairs and World Bank	Promote economic growth in maritime activities, ensuring social inclusion, gender equality and the creation of jobs while preserving and improving livelihoods as well as the sustainability of natural resources and ecosystem services. This report constitutes the first phase of the establishment of a national blue economy strategy.
United Kingdom	Maritime 2050: Navigating the Future	2019	Department for Transport	Set a comprehensive framework for the long-term development of the country's maritime economy, considering economic, social and environmental aspects.
United States	Blue Economy Strategic Plan	2021	National Oceanic and Atmospheric Administration	Foster the growth and sustainability of the blue economy, enhance data, services and technological resources on the blue economy and grow blue sectors to accelerate the economic recovery.

Note: Out of the 21 strategies under consideration, 17 have already been published and 4 are currently under preparation (Canada, Mauritius, Morocco, Tunisia). For the strategies in preparation, official reports, studies or papers have been selected to document the ongoing process.
Source: OECD (2023[17]), "OECD Global Survey on Localising the Blue Economy (July 2022- September 2023)", Unpublished, OECD, Paris and desk research.

Lead institutions

A range of government institutions define blue economy strategies but ministries of economy and of the sea often play a leading role. In Portugal, the Ministry of Economy and Sea leads the National Strategy for the Sea (2021-2030); in France, the Ministry of the Sea is the lead institution for the National Strategy for the Sea and Coast. In Morocco, the Ministry of Economy and Finance leads blue economy policy in collaboration with other ministries such as the Ministry of Equipment and Water; the Ministry of Agriculture, Maritime Fisheries, Rural Development and Water and Forests; the Ministry of Energy Transition and Sustainable Development; the Ministry of Tourism, Handcrafts and Social Economy; and the Ministry of Equipment and Water.

In some cases, ministries collaborate through designated co-ordination bodies. For instance, in Portugal, the Ministry of the Sea works with the inter-ministerial Committee for Ocean Affairs to ensure adequate monitoring of cross-cutting policies and to supervise the implementation of the National Strategy for the Sea. France's Interministerial Committee for the Sea (*Comité interministériel de la mer*, CIMer) regularly convenes ministries with a stake in maritime affairs, under the chairmanship of the prime minister; more broadly, the national Green Economy Committee (*Comité pour l'économie verte*) gathers authorities and stakeholders concerned by energy, circular economy, water and biodiversity to provide recommendations on economic, budgetary and regulatory instruments can encourage the preservation of marine ecosystems, prevent coastal risks and support the development of maritime activities.

Objectives

National blue economy strategies typically strive to achieve three core objectives:

1. **Promote blue economic growth**. For instance, South Africa aims to grow blue economy gross domestic product (GDP) by 350% by 2030, as compared to 2010, and Indonesia aims for the blue economy to contribute to 12.45% of national GDP by 2045 compared to 6.4% in 2015. Finland's Strategy for the Baltic Sea Region aims to achieve sustainable economic growth by tapping into seas and internal waters and their natural resources. It relies on the private sector for maritime industry success and the public sector for establishing an enabling environment for their business activities.
2. **Reduce pollution and foster environmental conservation and resilience**. For example, Portugal aims to install 370 megawatts of offshore wind and wave energy capacity by 2030 to reduce greenhouse gas (GHG) emissions by 55% and 90% respectively, compared to 2005 levels. Similarly, Panama seeks to curb emissions in blue sectors to reach a 40% decrease in GHG emissions by 2030 and carbon neutrality by 2050 (baseline 2017). The US Blue Economy Strategic Plan aims to assess, restore and protect coral reef systems. It also aims to enhance the resilience of coastal and Great Lakes communities by using data to inform the marine economy and recovery efforts after storms, for instance, through the creation of a database for coastal wind and water events.
3. **Foster blue innovation and skills by creating spaces for collaboration, education and research**. For instance, the UK maritime strategy aims for the country's maritime schools, colleges and universities to continue providing high-quality programmes and qualifications to enable the advanced technological maritime skills required in the future. Colombia promotes marine training and research by fostering academic programmes, scientific publications and comprehensive vocational training for seafarers. Portugal strives to increase blue jobs by 30% by 2030 and South Africa to generate over 1 million new jobs, while Japan aims to provide marine education in all its municipalities by 2025 through the Nippon Platform for Marine Education.

Implementation

Half of the strategies analysed have defined governance measures (11 out of 21). These measures relate to capacity building (e.g. training seafarers for shipping in Japan), government co-ordination (e.g. inter-institutional meetings to develop an action plan for the control, surveillance and prevention of coastal and marine pollution in Panama), financing and investment (e.g. as specified under the 2024 Finance Act, France plans to mobilise EUR 2.6 billion in its maritime policy by paying special attention to retirement and social security for seafarers as well as maritime security, while Indonesia plans to invest in offshore energy transmission infrastructure and smart grid technologies to integrate ocean-based renewable energy into national energy grids), research and innovation (e.g. Colombia leverages scientific expeditions to enhance knowledge of oceans), education and awareness raising (e.g. Portugal has prioritised ocean literacy through its Blue School programme, which rewards and guides schools working

on ocean literacy), partnerships (e.g. Indonesia develops “fair and feasible” partnerships between small-scale fishers and medium-large businesses, while Colombia promotes conservation and sustainable use of marine resources through the Eastern Tropical Pacific Marine Corridor regional initiative), and data and monitoring (e.g. the United States aims to curate a database of microplastics to monitor the effects of microplastics on the ocean, recreation and fisheries).

National blue economy strategies use a range of stakeholder engagement mechanisms, especially in the design phase. Stakeholders were mobilised via consultative meetings (e.g. Morocco), public consultations (e.g. Portugal), focus group discussions (e.g. Indonesia), working groups (e.g. United Kingdom) and cross-sectoral workshops (e.g. Cambodia) to develop a shared vision of the blue economy, understand needs, set priorities and lines of action, identify solutions and alternatives and define roles and responsibilities. Some processes, notably in Canada and the United States, paid particular attention to including traditionally unheard voices, such as Indigenous peoples and women.

National governments fund most strategies but some mobilise international loans (e.g. from the World Bank), supra-national funds (e.g. from the European Union) and sustainability financing (e.g. bonds). For example, Indonesia issued its first blue bond in 7-year and 10-year tenures for a total of JPY 20.7 billion on the Japanese bond market in 2023. Strategies mobilise an array of economic instruments, such as investments in strategic sectors (e.g. the Portuguese Ministry of the Sea invested EUR 78 million in 2013-20 in ocean research, technological development and innovation, and the state-owned Enova company in Norway invested NOK 3 billion in green shipping in 2020), grants (e.g. to co-operative fishery societies in Mauritius and for marine aquaculture in the United States) and fiscal instruments (e.g. tax deductions for ocean industries under the SkatteFUNN tax incentive scheme in Norway and the Research and Development Allowance and tax credits in the Netherlands to foster innovation in the maritime cluster). Out of the 21 strategies reviewed, only 4 define a budget for implementation. For instance, Panama expects to finance the implementation of the “blue economy and logistics” objective of its strategy (USD 1.1 billion for the period 2021-30) through contributions from each involved institution (institutional budget), along with funding from multilateral development agencies.

The majority of strategies (12 out of 21) have or plan to have a monitoring framework to track progress. For instance, the monitoring framework defined by Panama’s Commission for the Formulation, Development and Monitoring of the National Ocean Policy specifies an overall objective, a performance indicator (e.g. number of workshops conducted) or an impact indicator (e.g. number of incubators and accelerators created), the frequency of monitoring, the baseline and the remediation measure in case the target is not met for each of its 114 measures, to ensure transparency and accountability. The Seychelles plans to establish a monitoring and evaluation framework that leverages global indicators, including SDG ones, and to carry out a mid-term review to adapt measures.

Subnational blue economy strategies

Compared to the national level, subnational blue economy strategies and policies are still emerging. The OECD survey reveals that 7 of the 81 survey respondents have adopted a formal strategy or policy on the blue economy (Table 2.2). Five of the seven strategies are at the regional level (Nouvelle-Aquitaine, [France]; Canary Islands and Catalonia [Spain]; Scotland, [United Kingdom]; Washington, [United States]), with the remaining two at the city level (Barcelona and Vigo [Spain]). Nevertheless, the blue economy can also form part of broader economic and environmental strategies at the subnational level. For instance, innovation in the blue economy is one of the pillars of the Smart Specialisation Strategy of the region of the Canary Islands, Spain. In the United States, the Los Angeles Sustainability Plan, known as L.A.’s Green New Deal, aims to expand the use of shore power and other emissions-capturing technologies to 100% of ships by 2028 as part of a suite of emission reduction measures for ocean-based transport. The Regional Climate, Air and Energy Plan (*Schéma régional climat air énergie*, SRCAE) of the Sud region in France outlines a range of measures for the sustainable development of ports and fisheries in the region.

Table 2.2. Regional and local blue economy strategies

Country	City or region	Name	Year	Lead institution(s)	Objectives
France	Region of Nouvelle-Aquitaine	**Sharing the Ocean Ambition. Future Strategy for the Region** (*Partageons l'ambition océan. Stratégie d'avenir pour la Nouvelle-Aquitaine*)	2019	Nouvelle-Aquitaine Regional Council	Make the region a key national and international maritime player while ensuring the sustainable development of its maritime activities. The strategy has seven lines of action: improving knowledge of marine ecosystems; promoting territorial balance; enabling the sustainable use of resources and preserving biodiversity; securing the management of ocean commons; supporting maritime economic attractiveness; and enhancing innovation (biomimicry).
Spain	Region of Catalonia	**2030 Maritime Strategy of Catalonia** (*Estratègia marítima de Catalunya 2030*)	2018	Government of Catalonia and Catalan Maritime Co-management Council	Support the integrated development of economic activities that take place in Catalonia's maritime space to achieve the sustainable and robust development of the blue economy by 2030. The strategy has four areas of action: the sustainable development of the blue economy; the resilience of marine ecosystems; improving well-being; and promoting innovative governance.
	Region of the Canary Islands	**Canary Islands Blue Economy Strategy 2021-2030** (*Estrategia Canaria de Economía Azul 2021-2030*)	2021	Economic-Administrative Board of the Canary Islands and Vice-Ministry of Economy and Internationalisation	Improve the competitiveness and sustainability of the marine environment, its resources and activities. The strategy builds on six strategic pillars: governance; research and development (R&D); training and qualification; marine ecosystems and climate change; competitiveness; and marine heritage.
	City of Barcelona	**Government measure. Boosting the Blue Economy in Barcelona** (*Medida de gobierno. Impulso de la Economía Azul en Barcelona*)	2021	Barcelona City Council and Barcelona Activa	Boost the blue economy in Barcelona, fostering socially responsible development aligned with the Green Deal and the 2030 Agenda. Eight lines of action including concrete projects are set out: the creation of a blue economy hub; linking the blue economy with the city; employment and training; preservation of the local marine ecosystem; innovation; local and international promotion; development of sectors, and public-private governance.
	City of Vigo	**Blue Growth Plan Port of Vigo 2021-2027** (*Plan Blue Growth del Puerto de Vigo 2021-2027*)	2021	Port Authority of Vigo	Promote competitiveness, efficiency and sustainability in all maritime and coastal activities, facilities and services of the Port of Vigo by 2027. The strategy has four objectives: connectivity, innovation, green development and inclusiveness.
United Kingdom	Scotland	**A Blue Economy Vision for Scotland** (Complemented by Delivering Scotland's Blue Economy Approach)	2022	Scottish Government and Marine Scotland Directorate	Achieve shared stewardship of Scotland's marine environment by 2045, to support ecosystem health, improved livelihoods, economic prosperity, social inclusion and well-being. The strategy defines four areas of focus: a natural capital approach to decision making; infrastructure development (ports and harbours); data and decarbonisation in the blue economy; and future skills and lifelong learning.
United States	Washington	**Washington Maritime Blue Strategy**	2022	Washington State Department of Commerce and Maritime Innovation Advisory Council	Position Washington as the hub of a globally competitive, flourishing and environmentally sustainable maritime industry by 2050. To this end, the strategy sets five strategic goals: deep decarbonisation; blue innovation; working waterfronts; workforce development; and cluster co-ordination.

Source: OECD (2023[17]), "OECD Global Survey on Localising the Blue Economy (July 2022- September 2023)", Unpublished, OECD, Paris and desk research.

Subnational blue economy strategies consider freshwater and water security to varying degrees. Some (e.g. Catalonia [Spain] and Scotland [United Kingdom]) include freshwater fisheries and recreational fishing. Water-related risks are mentioned in some strategies, such as water shortages in the Canary Islands, Spain, sea-level rise in Catalonia, Spain, and plastic pollution in Washington, United States. Other strategies recognise the importance of water security for a healthy ocean and blue economy. For example, Scotland, United Kingdom, acknowledges the interconnectedness of freshwater, coastal and marine ecosystems, while Barcelona, Spain, emphasises the relation between marine and aquatic ecosystems and economic activities.

Subnational strategies widely differ in terms of sectors covered (Table 2.3). They consider a mix of traditional and emerging sectors, with the most represented being seafood, shipbuilding and repair, blue bioeconomy, biotechnology, research and education. A number of different sectors are considered, from 25 in Scotland, United Kingdom, to 6 in Vigo, Spain, and Washington, United States). Three out of seven strategies consider non-market benefits such as carbon sequestration (e.g. Scotland [United Kingdom]) or history and culture (Vigo [Spain]).

Table 2.3. Sectoral coverage of national and subnational blue economy strategies

Blue economy sectors and supporting activities	National			Subnational						
	FR	UK	US	NA	CA	CI	BA	VI	SC	WA
OECD survey sectors considered across blue economy strategies										
Seafood	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shipping	✓	✓	✓	✓		✓	✓	✓	✓	✓
Water passenger transport and related services	✓		✓	✓		✓	✓	✓	✓	✓
Port activities	✓	✓	✓	✓		✓	✓	✓	✓	✓
Shipbuilding and repair	✓	✓		✓	✓	✓	✓	✓	✓	✓
Water-related tourism	✓	✓	✓	✓	✓	✓	✓	✓		
Renewable energy	✓	✓	✓	✓	✓		✓	✓	✓	✓
Bioeconomy and biotechnology	✓		✓	✓	✓	✓	✓	✓	✓	
Research and education	✓	✓	✓		✓	✓	✓	✓	✓	✓
Other sectors considered across blue economy strategies										
Offshore oil and gas (shallow water)	✓	✓		✓		✓			✓	
Marine business and support services									✓	✓
Dredging		✓							✓	
Marine and seabed mining	✓	✓	✓	✓		✓				
Maritime safety, surveillance and security		✓		✓						
Freshwater fisheries									✓	
Desalination and salt extraction						✓				
Water treatment and abstraction							✓			
Waste disposal		✓								
Non-market benefits considered across blue economy strategies										
Carbon sequestration	✓								✓	
History and culture							✓	✓		
Social attitudes to the sea									✓	
Health and well-being									✓	
Production of oxygen									✓	
Marine protected areas	✓	✓							✓	
Sustainable food									✓	

Note: This table includes three national strategies France (FR), United Kingdom (UK), United States (US), five regional strategies Nouvelle-Aquitaine (NA), Catalonia (CA), Canary Islands (CI), Scotland (SC) and Washington (WA) and two city-level strategies Barcelona (BA) and Vigo (VI).

Source: OECD (2023[17]), "OECD Global Survey on Localising the Blue Economy (July 2022- September 2023)", Unpublished, OECD, Paris and desk research.

Lead institutions

No single subnational authority is in charge of the development, implementation and monitoring of blue economy strategies. Subnational government departments for economic development, innovation and maritime affairs tend to be in the lead, but they use a range of governance models to implement blue economy strategies. Three main models emerge:

- **Cross-government model**: This model involves multiple groups, committees or organisations responsible for different aspects of a strategy. For instance, the strategy of the Canary Islands, Spain, is governed by a steering group, an advisory group, a management group and six working groups related to the six pillars of the strategy. The management group, led by the Vice-Ministry of Economy and Internationalisation, and responsible for developing and monitoring the strategy, co-ordinating the work plan and providing the steering group with information and proposals for its evaluation, is composed of regional departments related to sustainable development, education, employment, energy, European funds, industry, R&D, the environment, maritime spatial planning, fisheries and aquaculture, ports, transport and tourism. The strategy of Scotland, United Kingdom, led by the Marine Directorate is co-ordinated by eight other directorates on agriculture and rural economy, early learning and childcare, economic development, energy and climate change, environment and forestry, equality, inclusion and human rights, the EU and external affairs. These directorates oversee the progress made on the 35 activities and 6 outcomes set out by the strategy. The Maritime Innovation Advisory Council of Washington, United States, oversees the implementation of the strategy with the support of the Department of Commerce. Barcelona, Spain, plans to have a Municipal Executive Committee on the Blue Economy formed by departments with a stake in the strategy.
- **Multi-stakeholder model**: Catalonia, Spain, made the Catalan Maritime Co-management Council responsible for validating, monitoring and adapting its maritime strategy, further supported by the Fisheries Local Action Groups, the creation of the Laboratory of Sustainable Maritime Initiatives and the consolidation of a territorial management model for the coast of El Baix Emporda.
- **Public-private partnerships**: Barcelona, Spain, relies on the Blue Economy Table, a public-private governance entity representing key blue economy players in the city, to co-design the strategy and drive its implementation through consultations, debates and new proposals.

Objectives

While being place-based and related to the local economy, subnational blue economy strategies also align with three sets of objectives that are similar to those set out in national blue economy strategies:

1. **Promote blue economic growth**: For example, Nouvelle-Aquitaine, France, aims to boost existing maritime, coastal and port activities as well as new ones to promote the attractiveness and sustainable development of the region, while Washington, United States, aims to build a strong business climate and attract investment to support the sustainable economic growth of the maritime sector. The city of Vigo, Spain, strives to become a "green port city" growing in a sustainable and competitive manner by 2027.
2. **Protect freshwater, coastal and marine ecosystems**: For instance, Barcelona, Spain, recognises that increased marine resource exploitation and land-based activities have led to a 50% reduction in marine biodiversity and, as such, aims to maintain the excellence of the bathing waters at more than 98% during the high tourist season as well as a good ecological status of reef parks. Catalonia, Spain, aims to achieve a 100% renewable energy system by harnessing the power of

deep-water offshore wind energy, while Barcelona, Spain, aims to halve its CO_2 emissions by 2030 compared to 2017. Many strategies consider emission reduction measures for shipping and port activities (e.g. Canary Islands, Catalonia, Vigo [Spain], Washington [United States]), while only one considers waste management measures (e.g. Canary Islands [Spain]). Scotland, United Kingdom, aims to designate at least 10% of its sea area as a Highly Protected Marine Area by 2026 and ensure that 81% of its waterbodies achieve at least a "good" classification by 2027.

3. **Foster blue innovation and skills**: For example, Barcelona, Spain, has a reskilling programme to help workers acquire the knowledge and competencies needed across blue economy sectors based on a prior assessment of needs, while Catalonia, Spain, aims to assess the needs for qualified jobs in the maritime sector to facilitate training for these professions. Through its strategy, Vigo, Spain, aims to create 14 000 new jobs, train 3 000 people in "blue skills" and implement 25 social innovation actions (e.g. roundtables with vulnerable groups) by 2027.

Implementation

Subnational strategies foresee several governance measures. Examples include capacity building (e.g. Washington [United States] aims to increase maritime-specific training, education and workforce development, including expansion of registered apprenticeships and youth programmes, while the Canary Islands [Spain] seek to develop training and technological specialisations on blue biotechnology and marine renewable energy), awareness raising (e.g. Scotland [United Kingdom] supported Argyll University in designing an aquaculture pilot programme for secondary school pupils to raise the attractiveness of "blue careers", while Catalonia [Spain] aims to promote education on the marine environment in all stages of compulsory education), partnerships (e.g. Washington [United States] aims to develop regional partnerships that promote competitiveness and reduce environmental impact) and data and monitoring (e.g. the Canary Islands [Spain] have a blue economy observatory that systematises the collection of data to support decision making in the framework of the strategy).

Innovation networks are a key feature of all subnational strategies (see "Innovation networks" in the next section). Through the creation of clusters, hubs and accelerators, subnational governments seek to facilitate connections between businesses and knowledge institutions to boost sustainable blue economy growth. Six of the seven blue economy strategies leverage existing blue economy clusters (e.g. Maritime Cluster of the Canary Islands [Spain], the *Clúster Nàutic* of Barcelona [Spain]), or aim to create new ones (e.g. the Blue Growth Cluster of Nouvelle Aquitaine [France], the Maritime Cluster of Catalonia [Spain], Washington Maritime Blue [United States]) to promote either innovation, specialisation or knowledge enhancement by creating a business environment conducive to synergies. Other measures include the blue economy entrepreneurship programme of Barcelona, Spain; supporting the Blue Economy Cluster Builder for small and medium-sized enterprises in Scotland, United Kingdom; and the Blue Accelerator programme in the Canary Islands, Spain, which supports start-ups in the blue economy with technical assistance, networking, training and financing.

Most strategies (six out of seven) involved some degree of stakeholder engagement during the design or implementation phase. In the design phase, Barcelona, Spain, consulted more than 70 actors to assess the state of play of the blue economy in the city, while the Canary Islands, Spain, held an open consultation process (including on line) with working groups (including economic and social agents, universities, research centres and the rest of the public administration) to improve the internal coherence of the strategy and build synergies across sectors. Similarly, the strategy of Washington, United States, was elaborated through collaboration with industry, government, Indigenous peoples, research universities and non-governmental organisations (NGOs). Other strategies have or aim fto facilitate stakeholder engagement during the implementation phase. For example, since the publication of its Blue Economy Vision, Scotland, United Kingdom, has delivered virtual information sessions, four workshops on blue economy delivery mechanisms, a blue economy survey and four engagement events. Catalonia, Spain, aims to establish

and implement a work plan for maritime spatial planning with stakeholders within the Catalan Maritime Co-management Council.

Strategies either define a budget for implementation or specify funding sources. In the first case, Barcelona, Spain, projects a EUR 40.5 million investment from 2020 to 2025 for the execution of its 43 strategic actions, while Vigo, Spain, outlines a budget of EUR 293 million over the 2021-27 period for the implementation of the 44 measures and 47 projects set out in its strategy. The Canary Islands, Spain, foresee a combination of EU and regional funding to implement the 61 proposed measures, while the strategy of Washington, United States, is funded exclusively by the federal Department of Commerce. Scotland, United Kingdom, aims to achieve its Blue Economy Vision by mobilising grant funding from the Marine Fund Scotland and benefitting from the planned GBP 580 million investment by the government of Scotland, United Kingdom, in vessels and ports as part of its Infrastructure Investment Plan, among other funding sources.

Two of the seven strategies considered have defined indicators to track progress on implementation. The Canary Islands, Spain, defines outcome indicators for its 6 strategic pillars as well as 40 general outcome indicators aligned with each of the 17 SDGs (e.g. gross value added [GVA] of the blue economy, number of blue economy businesses, weight of waste collected from beach, coastline and seabed clean-up campaigns, for SDGs 8, 9 and 13 respectively). The strategy of the city of Vigo, Spain, includes indicators for each of its 4 main objectives as well as the targets to be achieved by 2027 (e.g. 40% of public investment mobilised in innovative projects, 30% reduction of energy consumption in port facilities and 14 000 new jobs created by 2027 for the innovative, green, connected and inclusive goals respectively) and maintains an online platform providing real-time updates on the progress toward these targets.

The enabling environment for the blue economy at the subnational level

Beyond defining formal blue economy strategies, national and subnational governments use a range of tools to foster sustainable blue economies. The results of the OECD survey, complemented with desk research, shed light on the main instruments used across levels of government, notably relating to capacity building and awareness raising, data and information, planning tools, economic and environmental regulation and incentives, funding and financing instruments and innovation networks.

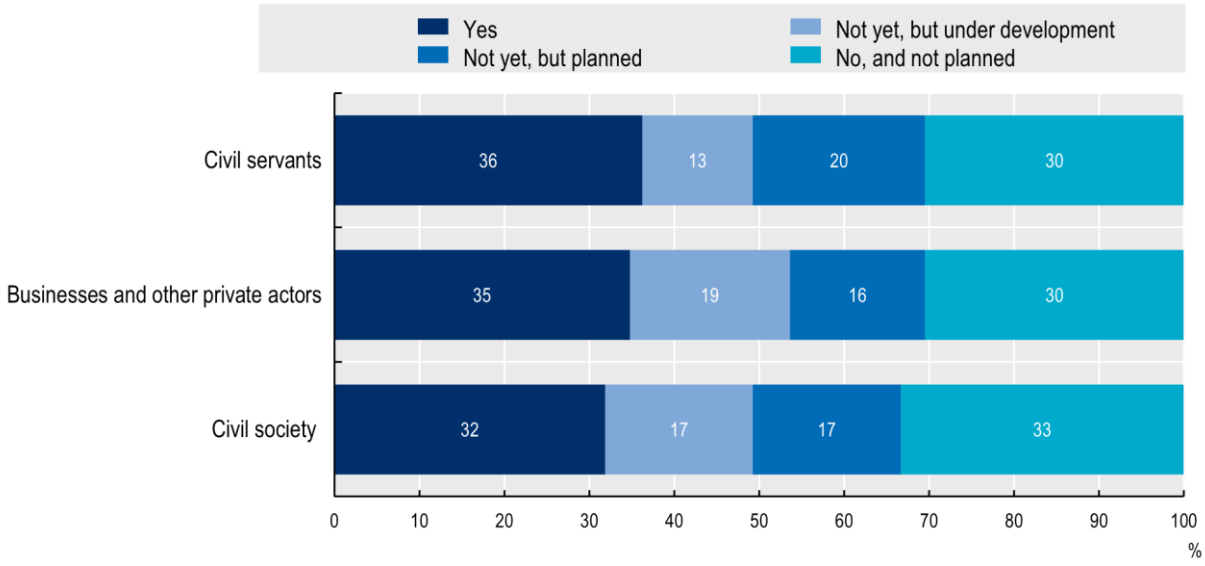
Capacity building and awareness raising

Over one-third of OECD survey respondents directly support capacity-building initiatives on the blue economy for civil servants (36%), businesses and other private sector players (35%) and civil society (32%) (Figure 2.2).

Government-led capacity-building activities for civil society tend to target people who are unemployed or looking to reskill in the blue economy and local communities in a broad sense. At the national level, Spain's *Empleaverde* programme aims to boost employment and entrepreneurship in the blue and green economy by connecting labour and environmental policies, with a focus on bringing currently unemployed people to the labour market; in Portugal, the Blue School (*Escola Azul*) is an educational programme led by the Ministry of the Economy and Maritime Affairs aiming to improve ocean literacy in schools. It distinguishes and guides schools that work on ocean literacy and creates a community of schools, businesses, municipalities and NGOs related to the blue economy. Given their proximity to citizens, subnational governments are well-placed to raise awareness of the blue economy and water security issues. In this sense, the region of the Basque Country in Spain co-finances Blue Point, a centre that raises awareness on plastic pollution in waterbodies and builds capacity for entrepreneurs related to marine plastic, as well as the "house of the sea" (*Kofradia-Itsas Etxea*), a knowledge centre on local fisheries aiming to promote fishing in the region by providing information and techniques on fishing in the Bay of Biscay. The French

Sud region has several awareness-raising initiatives targeting different groups and objectives, such as secondary school students on blue economy jobs (Calypso programme), sailors on reducing their environmental impact (*Écogestes méditerranée* programme) and beachgoers and holidaymakers on protecting the marine environment (*Inf'eaumer* and Eco Attitude programmes).

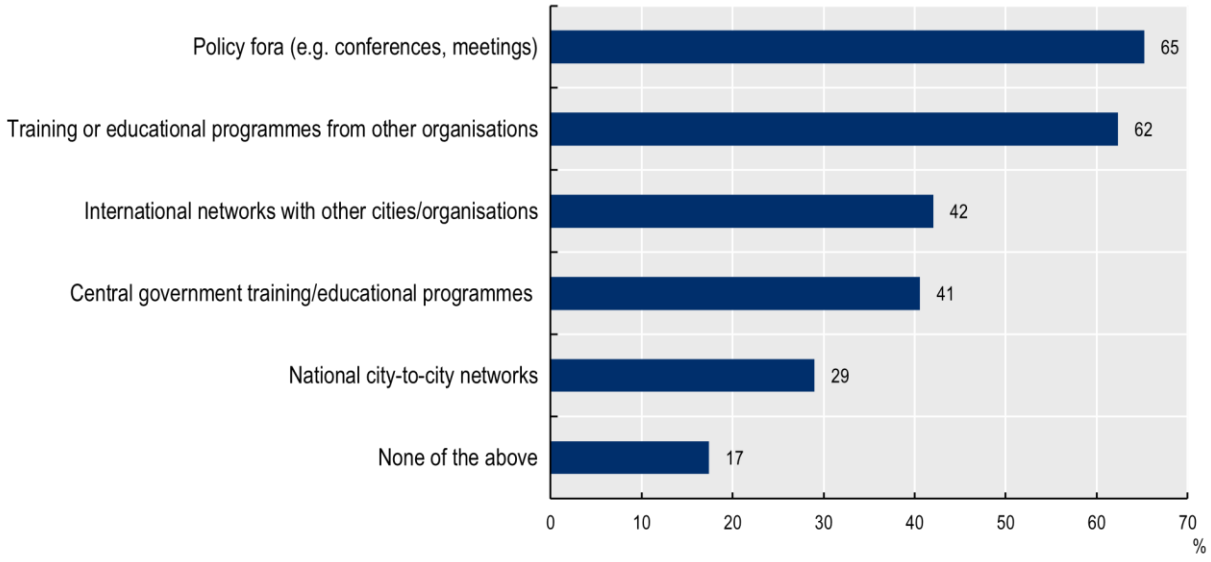
Figure 2.2. Capacity-building initiatives on the blue economy across survey respondents



Note: Based on 69 responses to question: "2.4.2. Does your city/region directly support capacity-building programmes for blue economy actors with a view to enhancing the resilience, inclusiveness, sustainability and/or circularity of blue economy sectors?". Survey respondents were invited to select one of the following options: "yes", "not yet, but under development", "not yet, but planned" or "no, and not planned".
Source: OECD (2023[17]), "OECD Global Survey on Localising the Blue Economy (July 2022- September 2023)", Unpublished, OECD, Paris.

National and subnational governments also contribute to building civil servants' capacity in the blue economy. For instance, in Colombia, the National Planning Department has developed a diagnosis tool to support the blue economy, set up an information system and carried out 32 workshops to share information and build capacities among coastal municipalities. The Nouvelle-Aquitaine region, France, supports local authority capacity building for preventing and valuing waste. The OECD survey highlights that around two-thirds of respondents report taking part in at least one form of capacity-building activity related to the blue economy (Figure 2.3), such as international networks and city-to-city partnerships. For example, the city of Puerto Montt, Chile, collaborates with the city of Piraeus, Greece, through the International Urban Regional Co-operation to exchange knowledge and good practices around nature-based solutions, the development of integral urban strategies around the blue economy and the development of marine-related conservation technologies through private sector and academia collaboration.

Figure 2.3. Subnational government participation in capacity-building activities



Note: Based on 69 responses to the question: "2.4.1. Does your city/region take part in capacity-building programmes on the blue economy or blue economy sectors related to enhancing their resilience, inclusiveness, sustainability and/or circularity?". Survey respondents were invited to select one of the following options: "yes" or "no".
Source: OECD (2023[17]), "OECD Global Survey on Localising the Blue Economy (July 2022- September 2023)", Unpublished, OECD, Paris.

Governments also support capacity building for businesses and entrepreneurs. For instance, the region of Western Cape and the city of Cape Town in South Africa are founding partners of the BlueCape initiative that aims to develop marine manufacturing (e.g. boats and related equipment, equipment for marinas and harbours), superyachts and ocean sports in the Western Cape region by supporting skills development, networking and events, as well as sharing market intelligence, providing policy and regulatory advocacy and support, facilitating market access. In the city of New Orleans, United States, the Office of Workforce Development works with businesses and higher education institutions to ensure that education programmes (e.g. Naval Architecture and Marine Engineering programme at the University of New Orleans) are tailored to the needs of the local blue economy. At the national level, the government of Kenya supports entrepreneurs and county government officials through the Aquaculture Business Development Programme, which aims to foster the development of smallholder aquaculture development as well as the broader development of the aquaculture value chain in 15 counties with high aquaculture potential.

Data and information

The OECD survey reveals that some subnational governments collect, share or use socio-economic and environmental data on a regular basis to inform blue economy decision making. For instance, the region of Basque Country, Spain, collects socio-economic data (e.g. GDP, number of businesses, number of employees, etc.) for all economic sectors that are sufficiently disaggregated to give an overview of blue economy GVA, businesses and jobs. In addition, it has a permanent satellite account for tourism, as does the Canary Islands region, Spain. Other subnational governments (e.g. Rotterdam [Netherlands] and Seattle [United States]) share municipal-level environmental data on indicators such as CO_2 emissions disaggregated by sector of economic activity, which would allow the calculation of CO_2 emissions from blue economy sectors.

In some cases, subnational governments conduct or commission studies that quantify the economic and social benefits of the blue economy in their jurisdiction, often to inform a blue economy strategy. For example, as part of their respective blue economy strategies, the cities of Barcelona and Gijón, Spain,

have commissioned studies to provide estimates of the blue economy's contribution to GVA, employment as well as the number of businesses within the blue economy. In the city of Lisbon, Portugal, the Department for Innovation and Strategic Sectors of the General Directorate for Economy and Innovation put together a Blue Economy Insight document (2019) assessing the number of businesses, jobs and GVA generated by the blue economy at the municipal level (Lisbon City Council, 2019[18]). The government of the region of Flanders, Belgium, took part in the Compendium for Coast and Sea (2018), a collaborative report by more than 150 experts containing socio-economic statistics on the blue economy in the region, published by the Flanders Blue Cluster (Devriese et al., 2018[19]). An updated document was published in 2023, highlighting an increase in the share of GDP and jobs related to the blue economy in the region despite the economic consequences of the COVID-19 pandemic (Mees et al., 2013[20]).

Subnational entities, especially river basin organisations (RBOs), also collect data on water quality indicators in basins and their coasts (e.g. Seine-Normandie Water Agency, France). The state of Rio Grande do Sul, Brazil, has several programmes in place to monitor water quality, sediment quality, effluents, aquatic biota and underwater noise and vibration. As part of the Life LEMA project, the region of Basque Country and its partners have used new technologies to detect, monitor and forecast hotspots of floating marine litter on the surface of the Bay of Biscay, allowing increased collection rates with a lower carbon footprint as well as a better understanding of local pollution levels (Life LEMA, 2020[21]).

Planning tools

National and subnational governments use several planning tools to preserve and conserve natural ecosystems while achieving territorial development goals (Table 2.4). When it comes to blue economy sectors and ecosystems, planning for freshwater, coasts, marine ecosystems and land can enhance water security to benefit the blue economy.

Table 2.4. Freshwater, coastal, marine and land-related plans

Type of plan	Role of national governments	Role of subnational governments
Coastal zone management plan (CZMP)	• Define the framework for the formulation and implementation of CZMPs. • Identify an agency responsible for coastal (and sometimes river basin) management at the national level and set environmental standards. • Collect and use coastal mapping data.	• Provide guidelines for local initiatives based on national guidelines. • Foster co-ordination of local plans for integrated coastal zone management. • Collect or use coastal mapping data from state and local agencies.
Marine spatial plan (MSPs)	• Elaborate the policy framework for MSPs. • Support the monitoring and evaluation of the implementation of MSPs with data gathered by national agencies. • Ensure adequate resourcing and support from different levels of government, including local governments.	• Contribute to MSPs by capturing the characteristics of coastal communities and ecosystems at the subnational level. • Federal countries can devolve powers for MSPs to subnational governments.
Land use plan	• Provide the regulatory framework for the development of land use plans at regional and municipal levels. • Approve subnational plans.	• Regions prepare strategic plans to address land use decisions. • Municipalities adopt detailed land use plans containing zoning regulations, use ordinances and permits to regulate land use. • Align with national planning directives.
River basin management plan (RBMP)	• Define water quality laws, policies and regulations to allow for the possibility of more stringent state or local standards. • Establish RBOs with national and subnational government representatives. • Ensure collaboration among agencies across levels of	• Ensure and take part in the implementation of RBMPs on the ground. • Oversee the collection of water tariffs, irrigation fees and pollution fees and can also be involved in the revenue collections associated with local and catchment level water

	government for effective watershed planning.	markets.

Source: Coccossis (2004[22]), "Integrated coastal management and river basin management", https://doi.org/10.1023/b:wafo.0000044814.444388.81; IWRM (2023[23]), *Local Authorities*, https://www.iwrmactionhub.org/learn/iwrm-tools/local-authorities; OECD (2016[24]), *The Ocean Economy in 2030*, https://doi.org/10.1787/9789264251724-en; OECD (2017[25]), *Land-use Planning Systems in the OECD: Country Fact Sheets*, https://doi.org/10.1787/9789264268579-en; OECD (2023[17]), Marine Spatial Planning: Assesssing Net Benefits and Improving Effectiveness, https://www.oecd.org/greengrowth/GGSD_2017_Issue%20Paper_Marine%20Spatial%20Planning.pdf.

Coastal zone management plans (CZMPs) are used to identify coastal resources, different user perspectives and competing land use interests with a view to successfully co-ordinating the management of coastal zones (IWRM, 2023[26]). CZMPs are often prepared by subnational governments in collaboration with coastal actors (e.g. land developers, port authorities, fishermen, etc.). For example, Brazil's National Coastal Management Plan (NCMP) mandates coastal municipalities to formulate and implement their own municipal coastal plans in accordance with the NCMP and state coastal plan guidelines. CZMPs also contribute to water security by preserving coastal wetlands, safeguarding the inflow of freshwater into coastal environments.

Marine spatial plans (MSP) are an integrated, place-based approach to the regulation, management and protection of the marine environment (OECD, 2017[27]). Central government departments and agencies (e.g. those relating to planning, environment, fisheries or infrastructure) are typically responsible for MSPs, except for federal governments, where the authority may be devolved to subnational states or regions. For example, Spain has adopted MSPs for five marine subdivisions, for which regional governments, in collaboration with the national government, are responsible for: identifying zones of interest for aquaculture activities; research, development and innovation; and new marine protected areas (MPAs). By allocating marine space to different activities including fisheries, aquaculture, energy and shipping routes, MSPs address the multiple, cumulative and potentially conflicting uses of the sea. Their co-ordinated approach maximises the use of maritime space while minimising environmental impacts, fostering a sustainable blue economy. A key instrument of MSPs, MPAs define specific areas managed to achieve conservation objectives. Protecting areas of environmental and recreational interest, such as coral reefs, can boost tourism activity while protecting valuable ecosystems.

Land use plans describe the recommended location and intensity of development for public and private land uses, such as residential, commercial, industrial, recreational and agricultural (OECD, 2017[25]). Land use plans can foster the blue economy while mitigating water risks. For instance, the Municipal Master Plan of the city of Matosinhos, Portugal, aims to boost socio-economic development, including by promoting coastal tourism and fishing, and improving the quality of water ecosystems (e.g. preservation of bathing areas and dune ecosystems) (City of Matosinhos, 2019[28]). As part of land use plans, environmental impact assessments are often required to mitigate the negative impacts of new developments. Several respondents of the OECD survey reported that environmental impact assessments are relevant to the blue economy. For example, in the United States, the National Environmental Policy Act requires federal agencies to assess the environmental impacts of their proposed actions before making decisions.

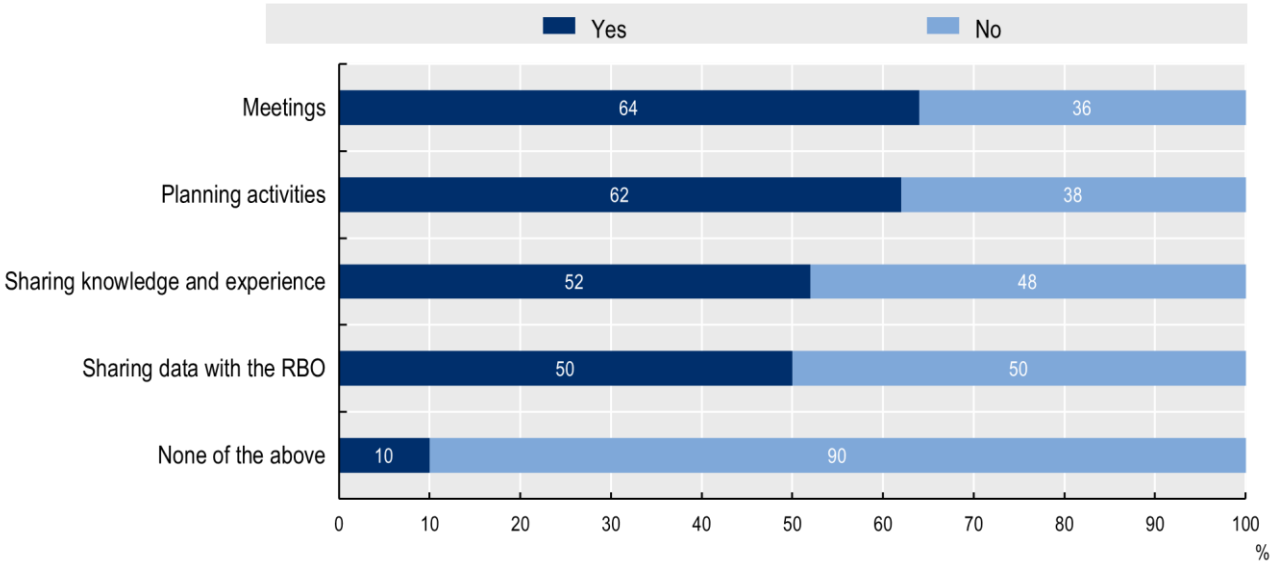
River basin management plans (RBMPs) are action-oriented framework documents that describe how water and related land resources should be developed and managed in a specific catchment area. RBMPs are often designed and implemented through RBOs, committees or councils formed by national governments, where subnational authorities are often represented. For example, in France, the Water Law (1964) established six water agencies for each main river basin, which formulate Water Development and Management Plans (*Schéma directeur d'aménagement et de gestion des eaux*, SDAGE) (OECD, 2013[29]). Out of the 50 cities and regions responding to the OECD survey, 32 report interacting with their RBO, whether by taking part in meetings (64%), taking part in joint planning activities (62%), sharing information and knowledge with other stakeholders in the RBO (52%) or sharing data (50%) (Figure 2.4). Cities and regions with an RBO recognise the main benefits of integrated water management at the basin level:

raising awareness on water resources management (74%), mitigating the risks of flooding and water scarcity or drought (66%), preventing pollution from rivers to seas (64%), allowing the efficient use of water resources (60%) or enhancing the impacts of investments at scale (34%) (Figure 2.5).

Economic and environmental regulation and incentives

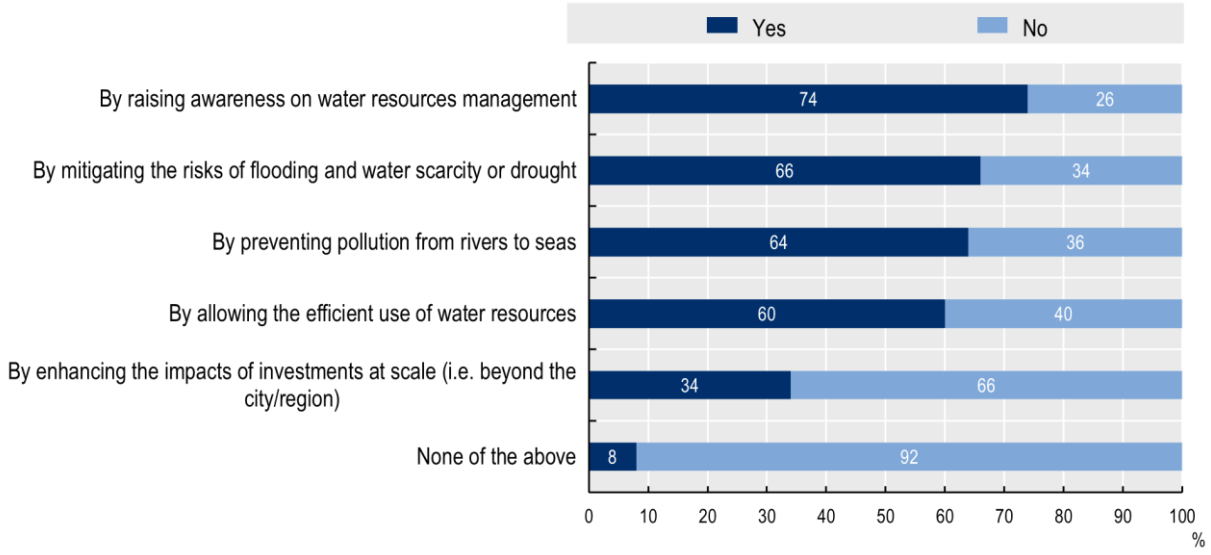
Regulation and economic instruments provide the framework and incentives for the blue economy and water security across levels of government. As part of regulatory frameworks, "command and control" tools such as caps, quotas, bans, standards, licensing and permitting can limit the negative environmental impacts of blue economy sectors, while economic instruments such as taxes, fees and subsidies can incentivise behavioural changes and generate revenue.

Figure 2.4. Interaction with the local RBO or committee



Note: Based on 50 responses from cities and regions to the question "2.3.1. Does your city/region interact with its local RBO or committee?". Survey respondents were invited to indicate for this question "yes", "no" or "not applicable". In total, 21 responses were excluded from the overall sample of 71 responses received for this question, including those from small island developing states (SIDS) (2), RBOs (9) and cities and regions reporting an absence of RBOs (10).
Source: OECD (2023[17]), "OECD Global Survey on Localising the Blue Economy (July 2022- September 2023)", Unpublished, OECD, Paris.

Figure 2.5. Benefits of integrated water management at basin level



Note: Based on 50 responses from cities and regions to the question: "2.3.2. How does integrated water management at basin level affect the resilience, inclusion, sustainability and circularity of the blue economy in your city/region?". Survey respondents were invited to indicate for this question "yes", "no" or "not applicable". In total, 21 responses were excluded from the overall sample of 71 responses received for this question, including those from SIDS (2), RBOs (9) and cities and regions reporting an absence of RBOs (10).
Source: OECD (2023[17]), "OECD Global Survey on Localising the Blue Economy (July 2022- September 2023)", Unpublished, OECD, Paris.

Governments can regulate and limit natural resource use and pollution by allocating licenses and permits and setting caps and quotas. Licenses and permits are legal authorisations to carry out economic activities, use a specific resource (e.g. land, water) or emit some form of pollution, helping to strike a balance between blue economy activities (e.g. fishing, aquaculture, energy and recreational fishing) and environmental protection (e.g. pollution permits). Caps and quotas place a hard limit on potentially harmful activities: for example, fishing quotas or total allowable catch limits, which apply to 76% of fish stocks,[1] place caps on the quantity of individual fish stocks that can be harvested in a given area (OECD, 2022[30]) and governments can set limits on the quality and volume of discharge to waterbodies with permits (OECD, 2017[31]). Subnational government entities are often responsible for authorising events and activities in compliance with regulations: for instance, the Portuguese city of Porto's utility company issues authorisations for events and services on beaches to ensure compatibility with the criteria of the national Blue Flag programme, which monitors bathing water quality. As with all regulatory tools, enforcement and compliance ensured through inspections and penalties are key to giving regulatory tools full force (OECD, 2014[32]).

Under cap-and-trade or tradable permit systems, permits can be traded between permit holders. Cap-and-trade schemes for GHG emissions are increasingly widespread and can affect several sectors of the blue economy, especially shipping and port activities. For example, the EU Emissions Trading System (ETS) has been extended to cover maritime transport emissions from 2024 (EC, 2023[33]). Several subnational governments have cap-and-trade schemes in place, such as the joint cap-and-trade programme of the state of California, United States, and the province of Quebec, Canada, which covers electricity production, industry and transport. Tradable permit systems can also apply to water pollution: for instance, water quality trading has allowed regulated entities in the Chesapeake Bay, United States, to meet permit requirements at a lower cost than with a simple cap and credit generators (e.g. farmers) to generate additional revenue through the sale of credits (OECD, 2017[31]). Similarly to tradable permit systems for pollution, biodiversity offsets can help new developments (e.g. port authorities, tourism infrastructure) compensate for unavoidable biodiversity damage by investing in biodiversity restoration elsewhere in order

to meet the overall biodiversity targets set by governments (typically “no net loss” or “no net gain”) (OECD, 2016[34]). For example, to comply with regulatory biodiversity compensation programmes at the federal level, the Port of Los Angeles has invested in several environmental restoration projects to compensate for its expansion, channelling millions of USD into restoring blue ecosystems such as lagoons, wetlands and eelgrass. A key issue for biodiversity offsets is ensuring equivalence between the biodiversity loss at the development site and the biodiversity gain at the offset site. Other important design and implementation features that should be considered to ensure effectiveness include: thresholds and coverage; equivalence; additionality; permanence; monitoring, reporting and verification; transaction costs; and compliance and enforcement (OECD, 2016[34]).

In some cases, restrictions or bans are in place to safeguard health and natural resources. Within the blue economy, restrictions are commonly placed on certain types of fishing gear and water-going vessels. Subnational governments (e.g. Barcelona [Spain]) are notably increasingly restricting cruise ships from docking at city-centre ports to reduce air pollution in densely populated areas. Limits on water use during droughts (e.g. in Barcelona [Spain] and California [United States]) and bans on harmful substances in water (e.g. on certain chemicals or single-use plastics) can be used to enhance water security. For example, several types of single-use plastic items (e.g. plates, cutlery and straws) have been banned from being placed on the markets of EU member states since 2021 and Ireland’s Department of Housing, Local Government and Heritage ultimately aims to eliminate all beach litter from these items (OECD, 2022[35]). The city of Seattle, United States, has local ordinances banning polystyrene foodservice containers and single-use plastic bags, requiring that all shopping bags, foodservice containers and utensils be reusable, recyclable or compostable.

Taxes and subsidies can be used to “tip the playing field” in favour of more sustainable practices or sectors, i.e. incentivising desirable behaviours and disincentivising undesirable ones. Environmentally driven taxes (e.g. on carbon emissions or plastic bags) place an additional cost on natural resource use or pollution to reflect negative environmental externalities, compensate associated costs and incentivise behavioural change. For example, trucks entering the Port of Los Angeles, United States, pay a USD 10 rate per 20-foot equivalent, while zero-emissions trucks are exempt from the rate. Fees, which users pay in exchange for a service, can be used to control access to natural resources (e.g. fishing license fees, royalties for seabed mineral extraction), recover the costs of environmental impacts (e.g. waste disposal fees) or the provision of a service (e.g. port docking fees). On the other hand, tax exemptions or subsidies are applied to desirable outcomes. For example, Kenya exempts equipment for wastewater treatment plants for hotels from paying customs duty, incentivising the hotel industry to invest in wastewater treatment and limiting the negative impact of hotels on freshwater and coastal water quality (OECD, 2020[36]). Nevertheless, many subsidies provided across economic sectors (e.g. fuel tax rebates or exemptions, support measures for fisheries) are potentially environmentally harmful and should be reviewed and eliminated or reformed (Matthews and Karousakis, 2022[37]).

Governments and industry bodies can define standards and voluntary instruments (e.g. labels, certificates and charters) to further incentivise sustainability and circularity in the blue economy. For example, emissions standards can reduce GHG and air pollution emissions for vessels, eco-design standards for plastics can support the use of bio-based alternatives, including from seaweed, and minimum technological standards for wastewater treatment plants can enhance water quality. In addition, “soft regulation” such as labels, certifications and industry charters can help signal sustainable practices (e.g. avoiding overfishing) and businesses and justify price premiums to citizens and consumers. For example, the Sud region of France signals professional, local and sustainable seafood products with the Regional Certificate for Fishing and Aquaculture Activities (*Certificat regional d’activités professionnelles pêche et aquaculture*). Additionally, the region’s Clean Ports initiative aims to improve the environmental management of marinas and fishing ports, notably by improving the treatment of run-off and wastewater from boats and waste collection, with a view to obtaining the homonymous EU certification.

Applying the “polluter pays” principle, extended producer responsibility (EPR) schemes make waste producers financially or organisationally responsible for taking back used goods and waste for adequate sorting and treatment. They incentivise eco-design and shift the responsibility for dealing with pollution and waste upstream towards producers and away from local governments (Brown, Laubinger and Börkey, 2023[38]). Existing EPR schemes apply to a range of products such as consumer electronics, packaging, tyres and batteries (OECD, 2016[39]), all of which can adversely affect freshwater, coastal and marine ecosystems through chemical, plastic and microplastic pollution. Residues from pharmaceutical products are particularly problematic for the blue economy, with traces of oral contraceptives causing the feminisation of fish and residues of psychiatric drugs altering fish behaviour (OECD, 2019[40]). National and subnational governments have implemented public collection schemes funded by EPR to tackle this issue, such as Canada, which has four regional EPR schemes regulated by different jurisdictions, and France, which has a national EPR scheme for pharmaceuticals. The industry funds both schemes, with retail pharmacies acting as collection sites.

With payments for ecosystem services (PES), governments can also compensate ecosystem managers (e.g. landowners, local communities) for the additional cost of enhancing ecosystem services. For instance, the Seine-Normandie Water Agency and the water operation of the city of Paris, France, provide technical and financial support to farmers that limit the use of fertilisers and other inputs, which helps improve water quality and reduces the cost of water treatment downstream. Other examples of PES in the blue economy include schemes paying for the restoration of blue ecosystems (e.g. mangroves, coral reefs or wetlands) to enhance coastal resilience to water risks and capture carbon. The latter refers to blue carbon projects, which demonstrate emissions removals or avoidance through restoration activities to generate carbon credits, which are sold to compliance (e.g. Clean Development Mechanism under the Kyoto Protocol) or voluntary (i.e. voluntary carbon compensation schemes offered to individuals and businesses) markets to generate revenue. Under robust rules and sustainability criteria, blue carbon projects can generate co-benefits that contribute to several SDGs, such as alleviating poverty by generating revenue streams for local communities.

Funding and financing instruments

The qualitative information provided by OECD survey respondents highlights that subnational governments tend to invest in three main areas when it comes to the blue economy: in boosting businesses, jobs and innovation (see examples in the section on innovation networks), in infrastructure (e.g. ports, coastal defence infrastructure) and in environmental protection. Regarding infrastructure investment, the city of Barcelona, Spain, is refurbishing the Olympic Port to allocate space for maritime and recreational activities; the city of Salvador, Brazil, is investing BRL 5 million in the recovery of public piers and the region of Nouvelle-Aquitaine, France, is funding part of a private sector SEENEOH tidal energy test site in the estuary of the Gironde River. The city of Rotterdam, Netherlands, invests in green infrastructure to prevent urban flooding, including green roofs, which reduce urban water treatment costs by preventing stormwater from entering the combined sewage system. Subnational governments are investing in innovative environmental protection projects, such as the Smith Cove Blue Carbon Pilot Project in the Port of Seattle, which is exploring ways to trap carbon through aquaculture and vegetation within port waters. The Infrastructure Investment Authority in the state of Pennsylvania, United States, is providing funding to the Partnership for the Delaware Estuary, an NGO leading collaborative and science-based efforts to improve the Delaware River and Bay, to plan, design and build a mussel hatchery to improve water quality, collect new data and raise awareness of mussels as a nature-based solution to improve water quality.

Among the funding and financing instruments suggested in the OECD survey (Box 2.2), national and subnational government funds are the main sources of funding for the blue economy at the subnational level, according to the OECD survey (Figure 2.6). More than half of respondents reported receiving subnational and national funds for blue economy activities (both 54%). In a few cases, national governments have specific funding mechanisms for the blue economy. This is the case in Portugal, where

the Directorate-General for Maritime Policy's Blue Fund (Fundo Azul) supports the blue economy with sectoral (e.g. seafood, renewable energy, pollution prevention) and cross-cutting (e.g. capacity building, digitalisation) grants and loans for private and public entities. Broader national financing sources for climate action and innovation can also be leveraged for the blue economy. For example, the city of New Orleans and the state of Louisiana in the United States both pursue federal funding for resilient and green projects, jobs, training and other opportunities arising from new climate-oriented legislation like the Infrastructure Investment and Jobs Act and the Inflation Reduction Act passed in 2022. In addition, contracts can help set common objectives and facilitate co-ordination across levels of government: for instance, the city of Sète, France, receives national government funds and loans relative to the blue economy through national-regional planning contracts (*Contrats de plan État-Région*), national-local contracts for the ecological transition (*Contrats pour la réussite de la transition écologique*) and regional-local contracts *(Contrats Territoriaux Occitanie*).

Box 2.2. Funding and financing sources for the blue economy at the subnational level

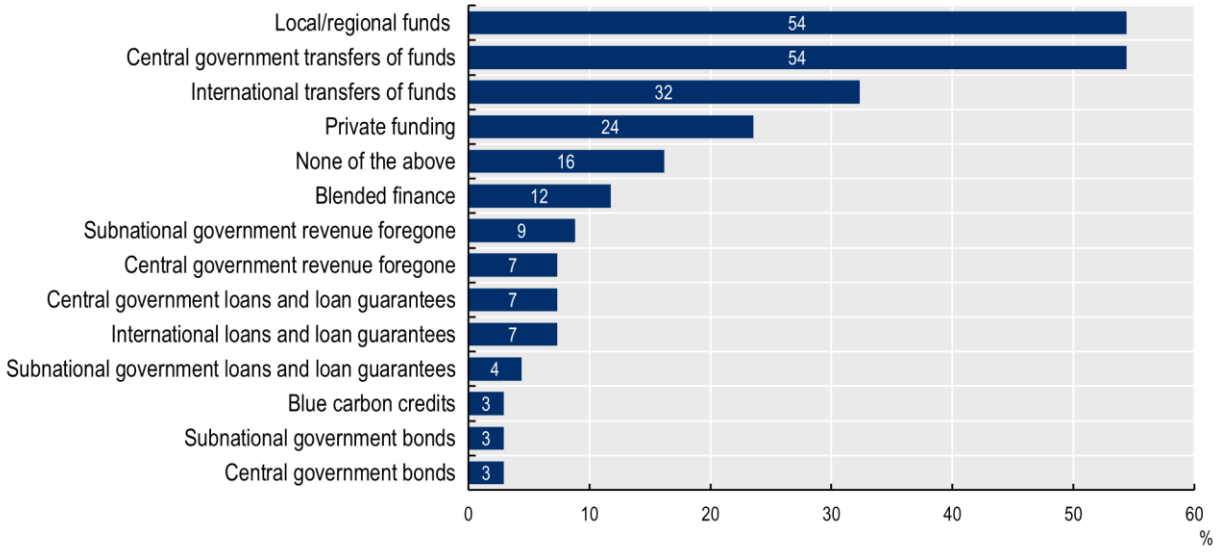
The OECD survey suggested a selection of funding and financing instruments for the blue economy. Funding refers to the money used to pay for an investment, operations and maintenance expenses, which may come from various sources such as grants and subsidies, taxes, user charges and fees, reserves, property income, etc. Financing refers to money from private or public financiers, which comes with an obligation for future repayment. This includes debt (loans, bonds) or equity, particularly in the case of a public-private partnership. Financing is repaid from funding sources.

These instruments include:

- Subnational, central government, international and private funds (e.g. subsidies and grants) directly received by subnational governments.
- Subnational, central government and international loans and loan guarantees, referring to money lent to subnational governments and loan guarantees where governments act as guarantors for subnational governments to obtain market loans with lower interest rates.
- Subnational and central government revenue foregone, partially or fully exempting subnational governments from paying certain taxes or fees to higher levels of government (e.g. value added tax exemptions on specific products or services).
- Blended finance, referring to the strategic use of development finance, such as official development assistance (ODA), to leverage additional sources of financing finance for sustainable development.
- Blue carbon credits, or the sale of emissions credits from blue carbon projects, which demonstrate emissions removals or avoidance through restoration activities, sold to compliance (e.g. Clean Development Mechanism under the Kyoto Protocol) or voluntary (i.e. voluntary carbon compensation schemes offered to individuals and businesses) markets to generate revenue.
- Subnational and central government bonds to raise money for specific projects (e.g. infrastructure development).

Source: OECD (2023[17]), "OECD Global Survey on Localising the Blue Economy (July 2022- September 2023)", Unpublished, OECD, Paris. and OECD (2022[41]), *G20-OECD Policy Toolkit to Mobilise Funding and Financing for Inclusive and Quality Infrastructure Investment in Regions and Cities*, https://doi.org/10.1787/99169ac9-en.

Figure 2.6. Funding mechanisms for the blue economy for subnational governments



Note: Based on 68 responses to question: "2.5.2. Through which mechanisms does your city/region government receive funds to finance activities towards the implementation of a resilient, inclusive, sustainable and circular blue economy?". Survey respondents were invited to select one of the following options: "yes" or "no".
Source: OECD (2023[17]), "OECD Global Survey on Localising the Blue Economy (July 2022- September 2023)", Unpublished, OECD, Paris.

Source: OECD Global Survey on Localising the Blue Economy (July 2022–September 2023).International transfers from supranational governments, international and non-governmental organisations are also a significant source of funding for the blue economy at the subnational level (32%). In many cases, national governments receive these funds before allocating them to subnational ones. The European Union is a major funder of blue economy projects at the national and subnational levels (Box 2.3): for example, the city of Lisbon, Portugal, financed part of its Sea Hub (*Hub do Mar*) with EU Recovery and Resilience Facility funds and the region of Guadeloupe, France, is part of the Sargassum Algae Co-operation Programme funded by EU Interreg Caribbean funds, which aim to strengthen the preparedness and resilience of Caribbean territories to natural disasters, in this case the invasion of Sargassum algae. Some developing countries (e.g. Kenya, Mauritius and Morocco) receive technical and financial support from international organisations such as the World Bank and United Nations Educational, Scientific and Cultural Organization (UNESCO) to develop blue economy strategies and maritime spatial planning frameworks. At the subnational level, the Go Blue project, supported by the European Union, the United Nations Human Settlements Programme (UN-Habitat), UNEP and the national development agencies of France, Germany, Italy and Portugal, aims to advance the blue economy in Kenya's six coastal counties. Non-government (non-profit) organisations also play an important role in funding projects that do not generate revenue, such as the Resilient Cities Network, which works with city leaders to solve interrelated problems around waste management and ocean plastic pollution through its Urban Ocean programme in Panama City, Panama, amongst other cities.

Box 2.3. Selection of EU funding and financing mechanisms and instruments for the blue economy

The European Union has several funding and financing instruments directly or indirectly related to the blue economy, providing investment opportunities for national and subnational governments.

EU funding and financing mechanisms with relevance for the blue economy

- **Horizon Europe** is the EU's flagship programme for research and innovation, which provides funding for a wide range of research and innovation activities, including those related to the blue economy. Funding opportunities may include research projects, innovation actions and collaborative initiatives addressing challenges in marine and maritime research, technology and development. For example, the Magpie project, funded with a EUR 30 million Horizon Europe grant and supported by major European ports, including the Haropa Port, France, the DeltaPort association, Germany, Rotterdam, Netherlands, and Sines, Portugal, aims to accelerate the green energy transition in ports and logistics sectors between 2021 and 2026.
- The **LIFE** programme is the EU's funding instrument for environmental and climate action initiatives. It offers funding across four key areas of focus (nature and biodiversity, circular economy and quality of life, climate action and clean energy transition), through action grants (e.g. technical assistance projects) and operating grants for NGOs. Under its sub-programme on "Circular economy and quality of life", it supports projects promoting sustainable marine and coastal management. In 2020, the programme granted EUR 2 million to the LIFE ECOREST project, aimed at restoring marine habitats within existing no-take areas along the Catalan continental margin in Spain, which have been impacted by fishing activities.
- The **Cohesion Fund** aims to reduce development disparities between EU regions. It brings together several EU funding streams to support projects in less developed regions. For instance, Spain received EUR 37.3 billion from the fund to support its green transition and a fair and competitive economy, including the development of a sustainable blue economy in both mainland Spain and its outermost region, the Canary Islands, Spain, for the period 2021-27.
- The **Interreg Europe** programme promotes co-operation among subnational governments to share innovative and sustainable solutions to regional development challenges, which can include the blue economy. In 2019, the Port of Hamburg, Germany, represented by the Ministry of Economy and Innovation (BWI) of the city of Hamburg, joined forces with local authorities from four other European port cities in Bulgaria, France and Italy under the Interreg Europe project Smooth Ports to develop solutions to improve traffic flow within ports and mitigate CO_2 emissions.
- The **Connecting Europe Facility (CEF)** provides funding for the development of trans-European transport, energy and digital infrastructure networks, such as maritime transport and port infrastructure. In 2023, the CEF launched a call for cross-border renewable energy projects, contributing to the cost-effective generation and deployment of renewable energy from offshore wind and ocean energy technologies.

EU funding and financing mechanisms on the blue economy

- The **European Maritime and Fisheries Fund (EMFF**) supports the EU Common Fisheries Policy and aims to promote sustainable fisheries, aquaculture and the development of coastal communities. Funding is allocated through loans, guarantees, equity and blended finance for investments in fishing and aquaculture activities and their resilience to climate change.
- The **BlueInvest** platform, launched in 2019 by the European Commission, facilitates access to finance and supports investment readiness for start-ups, SMEs and scale-ups in the blue economy. Funded by the EMFF, the platform provides support in the form of assistance programmes, a project pipeline database, investor reports, coaching, events and community engagement. For example, the platform facilitates access to financing for the Green City Ferries project in Stockholm, Sweden.
- The **EU Blue Champions** scheme, launched in 2023 by the European Commission in collaboration with the European Investment Bank (EIB), aims to support innovative projects

across the European Union, helping to restore marine and freshwater ecosystems and biodiversity, mitigate pollution and decarbonise the blue economy. Supported by the BlueInvest platform and EIB Advisory Services, it will provide financial advisory to 20 selected projects in the blue economy.

- The **InvestEU Blue Economy** instrument aims to support EU blue economy businesses by facilitating research, development, demonstration, upscaling, commercialisation and scaling of clean technologies and environmental sustainability solutions. Gathering the EMFF, EIB and InvestEU funds, the instrument mobilises EUR 500 million of EU funds between 2022 and 2027 for financial intermediaries investing in the blue economy.

Source: Based on BlueInvest (2023[42]), *Investor Report: An Ocean of Opportunities*, https://oceans-and-fisheries.ec.europa.eu/system/files/2023-03/Blueinvest-Investor-report-An-ocean-of-opportunities_0.pdf; CINEA (2023[43]), "LIFE Calls 2023 Sub-programmes and types of projects funded", https://cinea.ec.europa.eu/system/files/2023-05/01%20EU%20Info%20Days%202023_Intro_AB-AR-final.pdf; EC (2021[44]), *Life Ecorest: Ecological Restoration of Human-impacted Benthic Marine Ecosystems through Active Strategies and Participatory Approach*, European Commission, https://webgate.ec.europa.eu/life/publicWebsite/project/LIFE20-NAT-ES-001270/ecological-restoration-of-human-impacted-benthic-marine-ecosystems-through-active-strategies-and-participatory-approach; EC (2021[45]), *Horizon 2020: sMArt Green Ports as Integrated Efficient Multimodal Hubs*, https://cordis.europa.eu/project/id/101036594; EIF (2022[46]), "BlueInvest: Commission and EIF agree to mobilize €500 million with new equity initiative for blue economy", https://www.eif.org/what_we_do/equity/news/2022/commission-and-eif-agree-to-mobilize-500-million-with-new-equity-initiative-for-blue-economy.htm; Interreg Europe (2019[47]), *Smooth Ports - Reducing CO2 Emissions in Ports*, https://projects2014-2020.interregeurope.eu/smoothports/; EC (2022[48]), "EU Cohesion Policy: €37.3 billion for Spain to support its green transition and a fair and competitive economy", https://ec.europa.eu/commission/presscorner/detail/en/IP_22_6964.

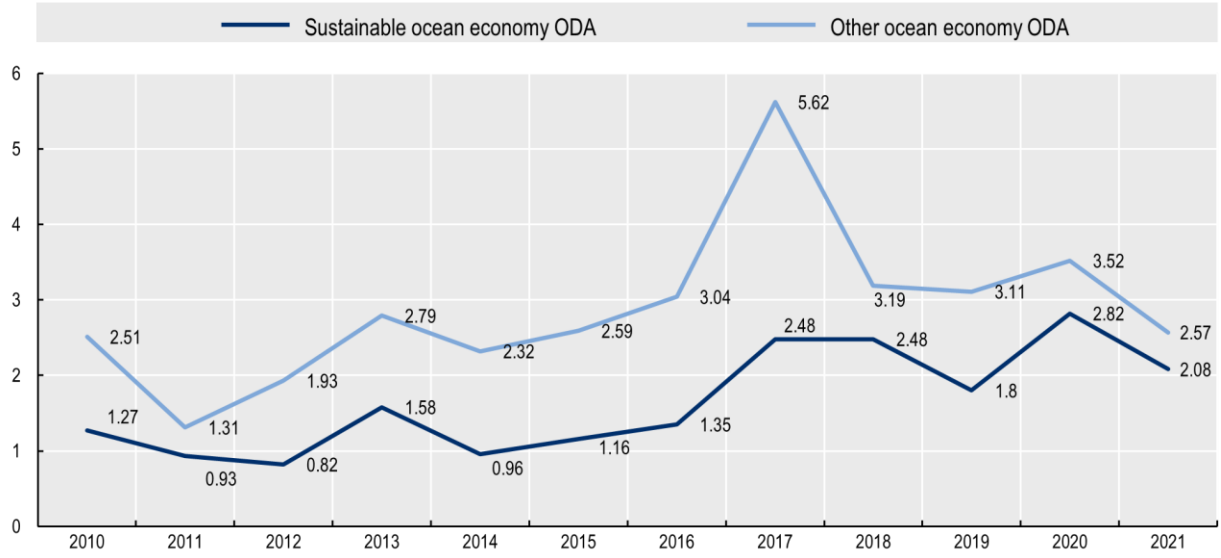
Governments fund blue economy sectors and projects at the subnational level by providing grant funding. Funding can be allocated through the organisation of competitions or selective calls for funding. For example, the Spanish city of Gijón's Municipal Business Centre (*Gijón Impulsa*) supports innovative projects through annual funding calls for different thematic areas, including the blue economy, while the city of Matosinhos in Portugal provides financial and capacity-building support to ten selected innovative business projects in the blue economy through its BlueAct competition. Governments can also directly allocate funds to specific innovative blue economy projects or businesses. For instance, the city of Rotterdam, Netherlands, reports using local funds to boost innovation, for example through the Blue City hub, which fosters circular and blue economy entrepreneurship, and the region of Nouvelle-Aquitaine, France, is one of the funding partners of a private sector tidal energy test site in the estuary of the Gironde River.

Blue economy activities also benefit from private and not-for-profit sector funding from businesses, venture capital and philanthropy, with 24% of survey respondents reporting the use of such funds at the subnational level. The city of Barcelona, Spain, highlights that private capital for the blue economy has increased considerably in recent years with the proliferation of venture capital funds such as Blue Oceans Partners, Ocean Capital or the funds of Credit Suisse or BNP Paribas, amongst others. Often, financing for the blue economy at the subnational level is not exclusively private but mixed with public funds, as is the case of AltaSea, a public-private ocean institute and partnership at the Port of Los Angeles (US). Regarding philanthropy, the Greater New Orleans Foundation's Southeast Louisiana Voices of Impacted Communities and Environments (SELA VOICE) initiative, a coalition of community-based and environmental organisations, works with the most vulnerable coastal communities in southeast Louisiana, United States, to provide a collective voice on issues of coastal restoration, protection and adaptation.

In developing countries, blue economy activities can be funded through blended finance (12% of survey respondents) and ODA. Blended finance is the strategic use of development finance to leverage additional finance for sustainable development, in line with the SDGs, in developing countries (OECD, 2023[49]). ODA is direct government aid that targets the economic development and welfare of developing countries (OECD, 2022[50]). Another key difference is that blended finance is intended to be time-bound and catalytic

to spur the replication and scaling up of projects and change the underlying market conditions, i.e. it should not be a permanent feature of private investments. OECD data on global development finance (including grants, loans and equity investments) related to the ocean economy show that, on average, ODA for the sustainable ocean economy grew at almost twice the rate of that of the ocean economy per year (12.6% and 7.4% respectively) and the gap between the two has narrowed in recent years (Figure 2.7).

Figure 2.7. ODA for the ocean economy, 2010-21



Note: ODA for the ocean economy (referred to as "other ocean economy ODA") consists of ODA in support of ocean-based industries and marine ecosystems, irrespective of whether the support explicitly takes sustainability considerations into account. ODA for the sustainable ocean economy is a subset of ODA for the ocean economy, for which certain sustainability criteria are fulfilled (OECD, 2024[51]).
Source: OECD (2023[52]), *Ocean Economy and Developing Countries*, www.oecd.org/ocean/topics/developing-countries-and-the-ocean-economy/.

According to the OECD survey, other government transfers such as revenue foregone (9% and 7% for subnational and national governments respectively) and government loans and loan guarantees (7%) play a relatively smaller role in financing the blue economy. Emerging sources of funding, such as blue carbon credits as part of payments for ecosystem services (see previous section) and government bonds, are not yet widespread (3% each). As an emerging subset of green bonds, which commit funds to "green" projects, businesses or assets, blue bonds raise capital to finance ocean-related projects with environmental, economic and climate benefits (World Bank, 2018[53]). Additionally, green bonds can have a "blue" component by funding blue economy and water security projects. In most unitary OECD countries, subnational government bond issuance is limited or non-existent, but cities and regions in federal countries such as the United States have increasingly been issuing green bonds to fund climate-related infrastructure (OECD, 2019[54]). For example, the District of Columbia Water and Sewer Authority in the city of Washington DC, United States, issued in 2016 the country's first-ever environmental impact bond, which funded green infrastructure projects to absorb and slow stormwater and prevent combined sewer overflow (EPA, 2017[55]).

Innovation networks

With the objective of strengthening innovation and sustainable growth in the blue economy, several subnational governments have designed and implemented or supported ocean economy innovation networks[2] with different sectoral focuses and network characteristics (e.g. number of actors, maturity and

size of businesses targeted, etc.). Beyond designing and managing innovation networks (e.g. defining the network's membership and structure, managing network activities), subnational governments also provide physical infrastructure (e.g. office and workshop spaces, coastal areas) for network members to meet, access research facilities and specialised knowledge, receive dedicated support and carry out pilots and experiments.

Broadly speaking, subnational blue economy innovation networks tend to be either mixed (i.e. business-science) or business-oriented. Many subnational innovation networks for the blue economy connect businesses and science to spur innovation, particularly in emerging blue economy sectors such as renewable energy and blue biotechnology. For example:

- In the Port of Los Angeles, United States, AltaSea is a waterfront campus for ocean-inspired scientific collaboration, job creation and education. Its research and business hubs act as a "marine Silicon Valley", nurturing scientific breakthroughs and emerging technologies, creating new products and services and supporting local jobs. Regenerative aquaculture, renewable energy, blue technology and underwater robotics are the focus areas.
- In the city of Lisbon, Portugal, the Sea Hub (*Hub do Mar*) project approved in 2023 aims to connect businesses and start-ups with universities, the local scientific community and researchers to help blue economy businesses grow, focusing on research and innovation, prototyping and testing activities. The Sea Hub was set up through a concession between the Port Administration and the City Council of Lisbon for the private use of public land.
- The maritime cluster of the state of Rio Grande do Sul's, Brazil, strives to mobilise and develop local productive arrangements for offshore oil, gas and naval activities. It is co-ordinated by the state's Ministry of Development, Industry and Foreign Trade and the Federal University of Rio Grande. In Brazil, industry clusters (*Arranjos Produtivos Locais*, APLs) are the main federal and state-level policy for local business development, supported since 2004 by an APL Permanent Working Group (OECD, 2020[56]).
- In the region of Flanders, Belgium, the non-profit Blue Cluster organisation, a group of over 150 private businesses, public sector organisations and knowledge institutions, is recognised by the regional government as a spearhead cluster for innovation in the blue economy.
- The Port of Antwerp in the region of Flanders, Belgium, is setting up the NextGen District within the port to support the establishment of companies focusing on the circular economy and the energy transition, including zones for demonstrations and testing new technologies. Besides the space itself, NextGen also aims to offer guidance for start-ups and financial support. The four key domains to apply for the NextGen District are Waste-to-X (chemicals/fuels), carbon capture and utilisation, bio-based technologies and renewable energy storage and hydrogen technologies.
- The city of Sète, France, aims to create a Nautical Industries Economic Zone as a business park accommodating companies, as well as R&D activities, manufacturing, services and training and apprenticeships in connection with the future Polytechnic Sea Centre.

Other innovation networks are more business-oriented, facilitating pilot testing, providing incubation services and helping start-ups scale up.

- Fomento San Sebastian, Spain, the municipal department responsible for the city's socio-economic development strategy, has set up a Surf City Cluster as a network of businesses, institutions and other actors promoting initiatives and projects for the surf sector through entrepreneurship, innovation and marketing.
- The Barcelona Port Innovation Foundation is a public-private initiative of the Port of Barcelona, Spain, which hosts 400 companies, to test new port-related innovations. The foundation's majority private ownership (51%) gives it more flexibility to carry out experiments than a majority port-owned structure would, as the port sector is heavily regulated.

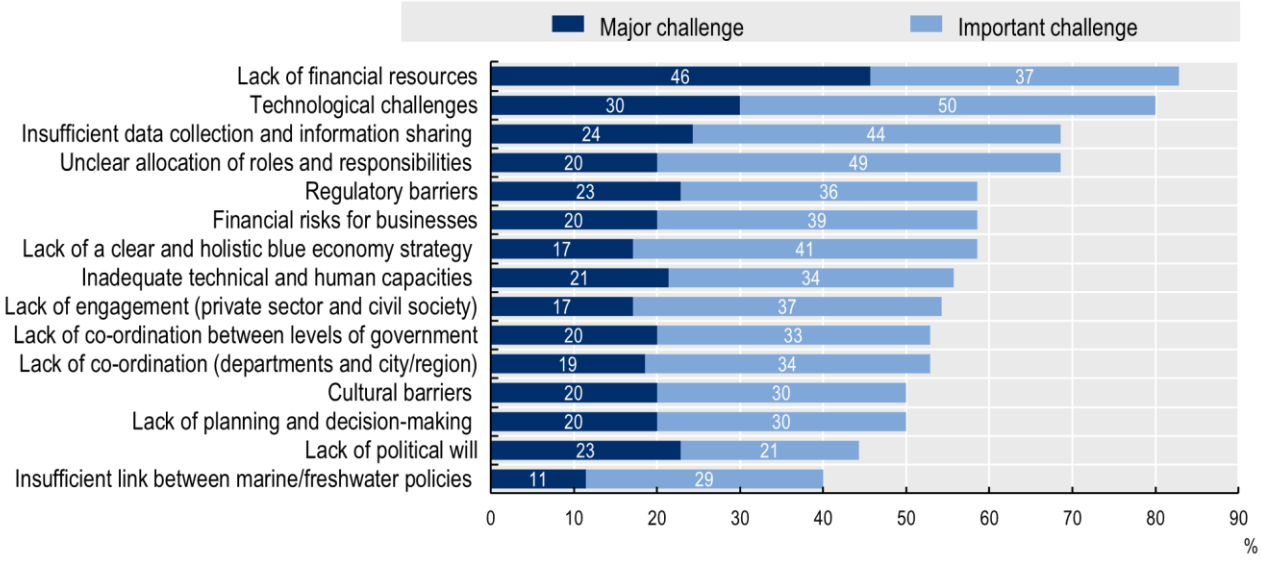
- The port of Rotterdam, Netherlands, is leading EU research projects focusing on greening ports, such as the Magpie project, which tests different solutions from offshore charging buoys for electric vessels to ammonia bunkering and smart energy systems.
- The city of The Hague and the region of South Holland, Netherlands, have created Campus@Sea as a network for blue economy businesses. It notably provides a testing ground in the North Sea, just off the city's coast, allowing technology developers to test new concepts and provide evidence to future customers and licensing authorities.
- The city of Rotterdam and the region of South Holland, Netherlands, are strategic partners of Blue City, an incubator that is home to 55 entrepreneurs in the blue and circular economy, providing workspaces and business capacity-building programmes.

Main challenges and future priorities for the blue economy at the subnational level

According to OECD survey respondents, beyond technological challenges, the main gaps towards a sustainable blue economy at the subnational level are the lack of financial resources (83%), insufficient data collection and information sharing, and an unclear allocation of roles and responsibilities for blue economy policy making across levels of government (both 69%) (Figure 2.8). Other important challenges relate to regulatory barriers, financial risks for businesses and the lack of a clear and holistic blue economy strategy (all 59%).

Future priorities can also help understand current challenges. According to respondents, the top priorities for the future are for the blue economy to create new jobs and business opportunities (74%), foster collaboration to leverage synergies between blue economy sectors and other sectors such as urban planning, water, waste, and energy, and enhance the resilience of the blue economy to climate change (both 68%) (Figure 2.9). Although respondents point to technological challenges as significant in terms of future priorities, boosting technology use and uptake ranks lowest according to respondents (34%).

Figure 2.8. Main challenges for the blue economy at subnational level



Note: Based on 70 responses to the question: "2.1.5. What are the main challenges to the development of a resilient, inclusive, sustainable and circular (RISC-proof) blue economy in your city/region?". Survey respondents were invited to qualify each challenge as a "major challenge", "important challenge", "moderate challenge", "small challenge" or "not a challenge".

Source: OECD (2023[17]), "OECD Global Survey on Localising the Blue Economy (July 2022- September 2023)", Unpublished, OECD, Paris.

Figure 2.9. Priority actions for the blue economy at the subnational level

Note: Note: Based on 65 responses to the question: "3.1. Which level of priority are the following actions for the development of a resilient, inclusive, sustainable and circular blue economy in your city/region in the next five years?". Survey respondents were invited to qualify each challenge as a "top priority", "medium priority", "low priority", "not a priority" or "not applicable".
Source: OECD (2023[17]), "OECD Global Survey on Localising the Blue Economy (July 2022- September 2023)", Unpublished, OECD, Paris.

The OECD survey responses and the multi-level governance analysis above point to several gaps related to policy making, coherence and implementation. Policy making relates to "who does what at which level", i.e. the institutional framework for blue economy policy and other related policies (e.g. freshwater and ocean) across levels of government. Policy coherence refers to the alignment of mandates, policies and sectoral objectives across government institutions. Finally, policy implementation is about the tools used to operationalise policies, including financing, regulation, data and information and capacity development. Building on evidence from the OECD survey and the multi-level governance analysis, notably the review of national and subnational blue economy strategies, the following sub-sections look into these challenges in more detail.

Policy making challenges

Subnational governments point to the unclear allocation of roles and responsibilities for blue economy policy making, with 69% of respondents reporting it as a major or important challenge (Figure 2.8). The blue economy consists of a range of sectors depending on freshwater, coastal and marine ecosystems, for which all levels of government have varying levels of involvement. As a result, responsibilities for blue economy sectors, as well as water, coasts and seas, are unevenly distributed and fragmented across levels of government. For example, subnational governments tend to have a bigger say in freshwater and coastal planning than they do in marine spatial planning and decision making related to the ocean, which tends to be more of a national government prerogative; and national port policy can undermine local government involvement in ports and contradict subnational government policies (ITF, 2017[3]). This landscape can lead to gaps, overlaps, conflicts of interest and economic inefficiencies in blue economy policy, highlighting the need for effective co-ordination mechanisms.

Existing national blue economy strategies often lack a territorial approach that would leverage the role of subnational governments to integrate place-based considerations. In fact, subnational authorities are not

systematically considered in national blue economy strategies: less than half (9 out of 21) allocate concrete roles and responsibilities for subnational authorities. For example, France relies on county (*département*) strategies for managing the public maritime domain and on regional operators such as marine natural parks to co-ordinate the central government's maritime policy with local authorities and related institutions; and Panama supports capacity building of local governments for the development of self-managed community projects. When national and local blue economy strategies co-exist, they lack co-ordination, even regarding fundamental issues such as definitions. For instance, the blue economy strategy of the city of Barcelona, Spain, highlights that estimates of the value of the blue economy are not comparable between the city, the region and the central government because all three levels of government have different definitions of the scope of the blue economy. Furthermore, the sectoral scope of national and subnational strategies is not always aligned, highlighting different priorities for the blue economy across levels of government and departments, and strengthening the case for a territorial approach to the blue economy that considers local concerns and priorities. For example, while the United States' Blue Economy Strategic Plan considers water-related tourism, the state of Washington's maritime strategy does not.

Subnational government capacity is another key obstacle to blue economy policy making. Inadequate technical and human capacities are a major or important obstacle for 56% of survey respondents. Only around one-third (36%) of survey respondents directly support capacity-building programmes for civil servants on the blue economy and a similar share (41%) report taking part in such programmes delivered by national governments. Instead, policy fora such as conferences and meetings (65%) and training or educational programmes from other organisations (62%) are the most widespread forms of capacity-building activities in which subnational governments participate. This echoes the findings of the OECD survey on water governance in cities, which highlighted that capacity is often the Achilles' heel of subnational governments, especially in the context of unstable or insufficient revenues exacerbated by financial crises (OECD, 2016[57]).

Data collection and information sharing, which are key to inform policy making, also rank prominently as both current challenges and priorities for the future (69% and 65% respectively). Collecting and sharing timely, consistent and comparable data and information relative to the blue economy is key to informing policy making and implementation. However, many blue economy sectors are not readily visible in official statistics and there is no international standard to measure the value of the blue economy and allow cross-country comparisons (Jolliffe and Jolly, 2024[58]). Statistics are often insufficiently disaggregated at subnational and sectoral levels to inform local decision making. Similarly, although information on the environmental impact of blue economy sectors (e.g. CO_2 emissions, waste generation) can be inferred from national datasets on environmental impacts per sector of activity when they exist, the level of sectoral and subnational disaggregation is not always granular enough to feed into local decision making. Data on water security, including the quality of freshwater and seawater, are often collected and shared at the subnational level but tend to be fragmented across collecting organisations (e.g. subnational governments, water operators, RBOs, etc.). Effective data collection and sharing is crucial for implementing blue economy policies as well as freshwater, coastal, marine and land use plans.

Policy coherence challenges

Despite the strong interdependence between the blue economy and water security, freshwater and seawater governance are often fragmented and poorly co-ordinated at the national and subnational levels, making the link between the two inconsistent and inadequate to deal with current and future shocks and stresses. Water security is a blind spot of national and subnational blue economy policy. Blue economy policy is often assimilated to marine policy and marine and freshwater decision making is often siloed across government departments. While 14 out of 21 national strategies consider freshwater ecosystems (e.g. rivers and lakes) in their definition of the blue or ocean economy, around 12 consider freshwater sectors (e.g. freshwater fisheries), with only 9 considering both simultaneously. Water-related risks are considered in some strategies, ranging from water shortages in Tunisia to sea-level rise and flooding in

the United States and plastic pollution in Indonesia. However, few strategies set out measures to address these risks. Noteworthy examples include Japan's measures to protect coastal areas from sea-level rise and storm surges, and France's commitment to improving the quality of coastal waters by combatting land-based sources of marine pollution.

At the subnational level, several strategies recognise the impacts of climate change on the blue economy (e.g. the Canary Islands and Catalonia [Spain] and Scotland [United Kingdom] highlight ocean warming and acidification as major threats) and associated water-related risks (e.g. the Canary Islands' water shortages [Spain], sea level rise in Catalonia [Spain] and plastic pollution in Washington [United States]). However, only three strategies spell out measures to tackle water-related risks. In response to water challenges, Vigo, Spain, emphasises its discharge and water quality monitoring project; Barcelona, Spain, promotes water treatment; and Washington, United States, foresees the development of incentives and finance mechanisms for maritime innovation on water quality. Only two subnational strategies consider freshwater sectors and ecosystems simultaneously. For instance, Scotland, United Kingdom, is committed to promoting freshwater fisheries while striving to achieve a "good" or better classification for at least 81% of its waterbodies by 2027, in line with the EU Water Framework Directive requirements.

Although freshwater, coastal, marine and land use planning should be connected in theory (Chapter 3), given their strong interdependencies, they are often disconnected from one another as they are designed and implemented by a range of different authorities and depend on different institutional and legal frameworks, environmental delineations and implementation timeframes. For example, while the EU Water Framework Directive requires RBMPs to be updated every six years, the EU Marine Spatial Planning Directive mandates the review of MSPs at least every ten years. Government entities responsible for ocean health are often not the decision-makers or regulators of many of the activities that threaten its well-being in freshwater and on land (SIWI, 2020[59]). RBMPs rarely consider the consequences of water management on blue economy sectors and most blue economy strategies do not consider water security as a strategic objective or measure to achieve the goals of their blue economy strategy, nor do they consider the impacts of the blue economy on water security. Yet enhancing the resilience of the blue economy to climate change and water risks (68%) and protecting the most vulnerable from the impacts of the blue economy (65%) are significant future priorities for OECD survey respondents.

More broadly, a fragmented approach to the blue economy prevails at the subnational level. Subnational governments without a formal blue economy strategy have implemented a wide array of initiatives that tend to focus on a single sector (e.g. seafood, tourism or renewable energy), falling short of a holistic approach to the blue economy that would leverage synergies between sectors and help manage trade-offs between sectors (e.g. between tourism and shipping, or between aquaculture and fisheries). Furthermore, several respondents stress the absence of an overarching regulatory framework for the blue economy at the national or subnational levels that would unite patchwork regulations corresponding to different policy areas as an obstacle to policy coherence at the subnational level and the lack of consistency across different sectoral laws and regulations affecting the blue economy (e.g. urban planning, transport and energy) can lead to conflicts of interest across government departments and agencies. Fostering collaboration to leverage synergies between the blue economy and other policy areas (e.g. energy, urban planning, water, waste) is identified as the second-most important priority going forward by respondents (68%) (Figure 2.9).

When subnational blue economy strategies exist, they are poorly connected to other policy areas. Out of the seven strategies analysed, just three align with environmental and climate mitigation and adaptation plans, two with pollution and waste management plans, and one with water management and supply plans. Strategies do not systematically consider leveraging subnational competencies such as waste management, spatial and urban planning, MPAs and water and sanitation. In relation to climate change, tools like MPAs, spatial plans and water management systems are often too fragmented across administrative boundaries and sectors to provide integrated responses to the increasing and cascading risks from climate-related changes in the ocean (IPCC, 2019[60]). By acknowledging the interdependencies

between issues such as climate change, inequalities and resilience, governments can avoid decisions made in one sector having unintended consequences in another (OECD, 2017[61]). Defining a subnational blue economy strategy could help overcome some of these challenges: in fact, the lack of a clear and holistic blue economy strategy ranks among the most significant challenges to the blue economy (59%) (Figure 2.8). Nevertheless, designing a blue economy strategy is not a panacea and will not resolve issues related to policy coherence by itself. Governments should aim to ensure that blue economy policy objectives are aligned with economic and environmental objectives across other policy areas and embed blue economy considerations into other strategies and policies (e.g. climate mitigation and adaptation, environmental protection and economic development).

The lack of dialogue between cities and their basins or watersheds exacerbates challenges related to the mismatch between hydrological and administrative boundaries, which call for a "city-basin" approach to water resources management. RBOs or committees are seldom involved in decision making for economic activities in rivers, lakes or coasts, and reflections on sustainable cities often focus on urban specificities without considering the basin in which they sit, missing opportunities to achieve water security, resilience and biodiversity conservation. This is echoed by the OECD survey results, which show that respondents see the insufficient link between freshwater and marine policies as the least important challenge to a resilient and sustainable blue economy.

Policy implementation challenges

Financial obstacles are the most prominent at the subnational level, with the lack of financial resources ranking as the number one challenge to the blue economy (83%) (Figure 2.8). The survey results point to local, regional and central government funds as the main source of funding for the blue economy at the subnational level, with a comparatively lower prevalence of private funding and blended finance and a very limited use of emerging instruments such as blue carbon credits. This is exacerbated by constraints in the financing sources subnational governments can leverage to fund blue economy policy implementation. Notably, unitary countries are subject to the "golden rule", which restricts subnational borrowing to finance long-term investment in infrastructure and large equipment. Issuing bonds is forbidden at the subnational level in most unitary OECD countries and, globally, many local governments are deprived of access to any form of loans due to poor fiscal capacity, creditworthiness and strict borrowing rules (OECD, 2019[54]). Several OECD survey respondents report challenges in accessing international financing, which national governments often receive before being allocated to subnational ones. These rules and constraints can limit subnational public investment in infrastructure and measures (e.g. capacity-building programmes) to implement blue economy policy. Furthermore, respondents (59%) consider financial risks for businesses a significant challenge. Subnational governments can play a role in supporting them directly (e.g. with grants) or indirectly (e.g. with capacity-building programmes) but they have limited resources to do so. Finally, despite the widely recognised imperative to diversify sources of blue economy financing and leverage innovative instruments such as blue bonds and blue carbon credits, the transparency and integrity of such forms of financing – which are generally subject to fewer regulations than more established instruments, and can suffer from the absence of a "universal" definition of the sustainable blue or ocean economy – is not always guaranteed.

Barriers related to regulation are designated as significant challenges by 59% of respondents, who point to the poor implementation of existing regulations as challenging for the blue economy. According to respondents, implementation is lagging for a number of reasons, notably the lack of awareness of national regulations at the subnational level, of clarity in the allocation of roles and responsibilities for implementation, of co-ordination of national with subnational governments, of concrete regulations implementing newly-approved legislation and policies; and of financial resources and capacity to implement regulatory requirements at the subnational level. Several cities and regions also report overlapping regulations across levels of government as an obstacle: for example, in the city of New Orleans, the permitting process for some major coastal rehabilitation projects has been challenging

because it is subject to a number of laws from different areas of local, state and federal government, slowing down the permitting process. Several respondents from the European Union report complex and even contradictory regulatory frameworks at the EU, national and regional levels, hampering the co-ordination of blue economy activities at the regional and local levels. Furthermore, regulation does not always keep up with the pace of technological developments in emerging blue economy sectors (e.g. offshore wind energy), creating regulatory "grey areas" that can hamper their development. Such grey areas, overlaps and lack of enforcement of existing regulations can also favour corruption and malpractice, jeopardising the integrity of the blue economy.

Finally, the top future priority for respondents is to continue boosting GDP and jobs (74%) but capacity-building initiatives for businesses are limited: around one-third of survey respondents (35%) report directly supporting capacity-building programmes for businesses and other private actors in the blue economy. Technological challenges, which rank second (80%), can also be linked to capacity challenges: within each blue economy sector, technological capacities can vary widely across businesses, exacerbating market entry barriers in sectors with high capital costs and technological needs such as industrial fisheries, port activities and shipping.

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Notes

[1] The OECD Review of Fisheries 2022 includes the following countries in the dataset: Australia, Canada, Chile, Colombia, Denmark, Estonia, Finland, France, Germany, Greece, Italy, Japan, Korea, Latvia, Lithuania, the Netherlands, Norway, New Zealand, Poland, Slovenia, Spain, Sweden, Türkiye, the United Kingdom and the United States, as well as Argentina, Brazil, China, Peru and Chinese Taipei.

[2] The OECD defines ocean innovation networks as initiatives that bring together a diversity of players (e.g. public research institutes, large businesses, SMEs, universities and other public agencies) into flexibly organised networks working on a range of scientific and technological innovations across different sectors (e.g. aquaculture, biotechnology, underwater robotics) (OECD, 2019[62]).