



The Blue Growth Challenge to Maritime Governance

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OPEN ACCESS

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Specialty section:

This article was submitted to
Marine Ecosystem Ecology,
a section of the journal
Frontiers in Marine Science

Received: 16 March 2021

Accepted: 09 August 2021

Published: 07 September 2021

Citation:

Guerreiro J (2021) The Blue
Growth Challenge to Maritime
Governance.
Front. Mar. Sci. 8:681546.
doi: 10.3389/fmars.2021.681546

In 2006 the European Union (EU) began a dramatic change in its conception and approach to maritime policy. By developing what was called Integrated Maritime Policy, there was an attempt to coordinate different sectorial policies and thus adding value, through synergies and economies of scale. At the same time, and as a result of scientific and technological advances, five strategic sectors with great growth potential were identified: aquaculture, renewable energies, blue biotechnology, deep sea mining, and nautical tourism. These were the pillars for the Blue Growth Strategy, leading to more jobs and global economic growth. This trend quickly spread to other continents, universalising the concept of blue growth. However, the growing competition for maritime space, due to new uses, led to the realisation that along with the need to ensure confidence and stability for investors, it would be imperative to develop new planning and management instruments for these spaces. During this process, governments quickly realised that this evolution, which had the potential for far reaching economic and social impacts, required a new institutional framework adapted to this new reality, which would end up having an impact on the governments structure itself. We have witnessed, particularly during the last decade, a profound conceptual change in the governance of maritime space. The design of new political, legal, institutional, and governmental frameworks, which are introducing a new model of maritime and marine governance at a global scale, are probably the most critical one since World War II. This article develops this analysis, based on several examples, both in the EU as well as in other countries outside the bloc, particularly those surrounding the Atlantic, in order to demonstrate that the drive towards a blue economy triggered a profound and deep change in marine policies and governance.

Keywords: blue growth, maritime governance, ocean economy, marine policy, maritime spatial planning

Abbreviations: EU, European Union; UNCLOS, United Nations Convention on the Law of the Sea; UN, United Nations; EXPO'98, World Exhibition "The Oceans, A Heritage for the Future"; IWCO, Independent World Commission for the Oceans; EC, European Commission; SIDS, Small Island Developing States; IMP, Integrated Marine Policy; MSP, Maritime Spatial Planning; USA, United States of America; MoU, Memorandum of Understanding; EEZ, Exclusive Economic Zone; CTI-CFF, Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security; OECD, Organisation for Economic Co-operation and Development; IOC/UNESCO, Intergovernmental Oceanographic Commission of United Nations Educational, Scientific and Cultural Organisation.

INTRODUCTION

Ocean governance reentered the global political agenda soon after World War II also reflecting the new political order. It is agreed that the 1945 Truman Declaration,¹ claiming the unilateral right of the United States to explore mineral resources, namely oil, within the continental shelf led to a strong reaction in other nations and paved the way for the first United Nations Convention on the Law of the Sea (UNCLOS) UNCLOS conference in 1958 (Un General Assembly, 1958). The long negotiation process finally led to its adoption in 1982 (Un General Assembly, 1982) an entry into force in 1994, with the ratification by 60 countries. Following this major milestone, the United Nations (UN) declaration of the International Year of the Oceans in 1998, led to a renewed focus on the oceans for the oceans political agenda and the World Exhibition “*The Oceans, A Heritage for the Future*” (EXPO’98), brought together 160 official representations attracting eleven million visitors to Lisbon.² Of particular significance was the launch of the report of the Independent World Commission for the Oceans (IWCO), “*The Ocean of Our Future*,” during EXPO’98, which addressed matters from marine conservation to ocean science and technology. The report also included a specific chapter on Ocean Governance which clearly stated that “*The most comprehensive challenge to be faced concerns the development of oceanic governance systems that promote peace and security, equity and sustainable development. The application of modern technology to the oceans, when poorly envisaged, determines their deterioration and overexploitation. It is simultaneously the most powerful force to allow transforming potentialities into realities and to satisfy basic needs*” (IWCO, 1998). Thus, the turn of the millennium brought a new approach to the challenges of marine governance on a global scale, particularly to the need of stakeholders involvement, as well as the role of science and technology in a more sustainable use of the oceans. The scientific community increased its focus on addressing these themes and Paquet (1999) introduces one of the very first and most quoted modern definitions, on “governance of marine spaces”:

“The governance of marine spaces is the management of stakeholder activities in these spaces. To optimize this management and to address stakeholder issues requires that effective governance frameworks be in place. Collaborative, cooperative, and integrative governance are improved frameworks for dealing with stakeholder issues. Traditional governance models have been based on a management science approach where the premise is that leadership of organisations (public, private, or civic) is strong, and have good understanding of their environment (future trends, rules of the game, and the organisation’s goals).”

This combination of scientific and technological advances, introducing new economic uses of the maritime space and the need of stakeholders involvement and active participation, led to the need for new governance models of maritime and marine

space. The European Union (EU), in 2006, decided to address the issue of ocean governance and adopt a more holistic approach aiming to analyse, as a whole, the state of the art and the future potential of different sectoral maritime policies, concluding that: “*The EU is the world’s first maritime power in several sectors and the “Blue Economy” represents 5.4 million jobs and a gross added value of almost EUR 500 billion per year, there will still be, in a number of areas, margin for further growth. However, the different sectoral policies of maritime transport, industry, fisheries, offshore energies or the marine environment, among others, had hitherto evolved separately, lacking a holistic approach to the oceans and seas, which is understood to generate economies of scale*” (European Commission - EC, 2006). Subsequently, the EU approved its Integrated Maritime Policy [Blue Book (COM (2007) 0575)] (EC, 2007) followed by the Marine and Maritime Agenda for Growth (EC, 2012a), which introduced the Blue Growth Strategy.

Thus, two basic concepts became consolidated: (i) Blue economy a part of the economy composed of different interdependent sectors, such as maritime transport, tourism, energy and fishing, which are based on common skills and shared infrastructures (such as ports and electricity distribution networks) and depend on the sustainable use of the sea; (ii) and Blue Growth, which aims to support long-term sustainable growth in all marine and maritime sectors, recognising the importance of the seas and oceans as engines of the European economy, with great potential for innovation and growth, namely in the sectors of aquaculture, coastal tourism, marine biotechnology, energy from the oceans and deep sea mining (EC, 2012b). The Blue Growth Strategy is considered to be based on three fundamental axes: (i) Knowledge of the marine environment; (ii) Maritime spatial planning, and (iii) Integrated maritime surveillance.

Also relevant to the understanding of the fundamentals of Integrated Marine Policy (IMP) are two key principles, outlined since the Green Paper (EC, 2006): (i) Maritime policy should create instruments and methods to ensure the coherence of land and maritime spatial planning systems, in order to avoid duplication of regulation and to prevent the transfer of unresolved land planning problems to maritime space; (ii) maritime spatial planning and integrated coastal zone management, should provide private companies with the legal framework security they need to invest.

Although the EU was a pioneer in this matter, it is no less true that the concept and debate surrounding the Blue Economy became globalised and in February 2012, at the 1st World Oceans Conference in Singapore, the World Bank announced the initiative “Global Partnership for Oceans” and its president, Robert Zoellick, affirmed that the oceans were home to a sub-blue “economy” recognised and under-valued, with enormous potential for “blue growth” (Zoellick, 2012 in Silver et al., 2015).

The institutionalisation of the debate at the UN level became clear in the context of the UN Conference on Sustainable Development, held in Rio de Janeiro in 2012 (Rio +20). Actually, even during the preparatory meetings, the issue of the blue economy was formally debated, namely at the 2nd preparatory

¹<https://www.presidency.ucsb.edu/documents/proclamation-2667-policy-the-united-states-with-respect-the-natural-resources-the-subsoil>

²EXPO 98, organised by Portugal under the aegis of the Bureau International des Expositions occurred in Lisbon and was launched on May 22, 1998.

meeting in March 2011 (Intergovernmental Oceanographic Commission of United Nations Educational Scientific and Cultural Organization – IOC – /UNESCO, 2011) and, at that same meeting, Pacific Small Island Developing States (SIDS), suggested the adoption of the blue economy as the one that would best defend their development interests, instead of the Green Economy (which would be central to the Rio +20 Conference). This thesis would make its way and be consolidated at the third SIDS conference in Apia, Samoa, on September 3, 2014, concluding that “(...) Sustainable fisheries and aquaculture, coastal tourism, the possible use of seabed resources and renewable energy are among the main sectors of a sustainable ocean economy in small island developing states” (United Nations, 2014b). During the conference, although the theme of oceans was encompassed under the broader environmental umbrella, it is no less true that the potential of the High Seas was addressed, with several countries declaring an interest in increasing their areas of jurisdiction and sovereignty in the marine environment, through the expansion of the continental shelf. Accordingly, the oceans governance and the blue economy, were formally discussed and the subject of several side events, assuming unprecedented relevance, as several authors recognise (Campbell et al., 2013). Likewise, several regional organisations have also started to embrace the path of blue growth, of which the Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security - CTI-CFF is a paradigmatic example encompassing Indonesia Malaysia, Papua New Guinea, Philippines, Solomon Islands, and East-Timor that promoted, precisely at the Rio +20 Conference, a side event on the blue economy (CTI-CFF, 2012).

Soon, particularly after Rio +20 Conference, Blue Growth became a concept and policy approached all over the world, from Africa to Asia, thus implying a reinvention of maritime and marine governance and a redesign of the legal frameworks. However, it soon became apparent that a change in the governance model would also have an impact at the institutional and governmental levels.

The Blue Economy concept was formally defined at the UN itself in 2014, as having as its main aim: “improving human well-being and social equity, significantly reducing environmental risks and ecological fragilities” (United Nations, 2014a). The prospective analysis for 2030 on Blue Economy is also addressed in 2016 by the Organisation for Economic Co-operation and Development (OECD), namely in its capacity to generate economic growth based on innovation, contributing to the future creation of “new blue jobs.” Special attention is devoted to emerging ocean-based industries, in view of their high growth and innovation potential, and the contribution to facing challenges such as energy security, environment, climate change, and food security (OECD, 2016). While the World Bank defined the Blue Economy as: “The sustainable use of ocean resources for economic growth, better livelihoods and jobs, preserving the health of ocean ecosystems” (World Bank, 2017).

This is probably the greatest change in global oceans governance since the end of World War II and the resulting “New Global Order,” which was itself the greatest conceptual rupture since the Discovery Era in the XV and XVI centuries which brought a “New Order” to oceans governance, where

the kingdoms of Portugal and Castille shared the domain of the oceans. That power was recognised by the 1494 Treaty of Tordesillas and, with it, the domain of maritime trade and the possession of new lands and their natural resources. The Treaty of Tordesillas, in addition to the possession of the discovered lands, granted Portugal and Castile the right to maritime trade routes, which would become global with the discovery of the “sea route” to India, by Vasco da Gama in 1498, guaranteeing the domain of the “Spice Route,” bypassing, and depleting the Arab and Italian Republics dominance in east-west trade (Crowley, 2016; Waisberg, 2017). Together with Columbus’s voyage to America and Magellan’s circumnavigation of the Earth, these developments formed the basis of what is today considered the first instance of globalisation. This global order was immediately contested by the other maritime powers of the time, in particular Netherlands, France, and England, only coming to an end in the early XVII century with the thesis of the Dutch lawyer Hugo Grotius, standing for the freedom of navigation and oceans as a common heritage³: the *Mare Liberum* concept opposing the *Mare Clausum* of the Treaty of Tordesillas (Vieira, 2003; Torres, 2017). The *Mare Liberum* principle ended up being one of the central pillars of UNCLOS.

Surprisingly, this “*status quo*,” together with the “three-mile cannon shot rule” applied to the first concept of a territorial sea (Kent, 1954) in place until World War II, despite an attempt to address it in 1930 by the predecessor of the UN, the extinct Society of Nations (Zacharias and Ardron, 2020). The new global order that emerged after World War II, particularly after the 1945 Conference of Yalta in the Crimea, reshaped global powers into the “spheres of influence” in the West (United States) and East (Union of Soviet Socialist Republics) in a way that several authors considered a new Tordesillas Treaty, also reflecting maritime power and technology (Jackson, 2019). It is within this context that the Truman Declaration reflected three realities: (i) the new balance of powers; (ii) scientific and technological advances, and (iii) the need for oil. This truly represented the industrialisation of the oceans, from oil exploitation to industrial fisheries and a never seen explosion of maritime commerce and shipping. For the second time in history, new science and technology triggered a “Blue Growth Revolution,” leading to the need of UNCLOS, which reshaped ocean governance. Today, new technological developments are accelerating the rise of Blue Growth, increasing the uses of maritime space (e.g., offshore wind farms and aquaculture, blue biotechnology, mineral accessibility), accordingly new rules are being discussed as social and political

³The thesis of *Mare Liberum* was actually developed to the defence of the Dutch position in a well-known historical episode, which is the seizure of the Portuguese vessel Santa Catarina by Dutch ships under the command of Admiral Jacob van Heemskerck. The Santa Catarina was the largest vessel at the time with 1500 Ton, and was travelling from Macau to Malaca loaded with the most valuable products from China and Japan. The episode was a climax of the war between Holland, Spain and Portugal for the control of the monopoly on trade of the East Indies. The issue was that although van Heemskerck had no authorisation for that action, many stakeholders of the Dutch East India Company were eager to put the hands on the prize. On the other hand, several other stakeholders were very upset with that action, which they considered an act of pure piracy, harming the reputation of the company and, obviously, the Portuguese kingdom demanded the return of the cargo. The scandal reached the courts, and the Dutch defence was delivered to a brilliant lawyer – Hugo Grotius (Borschberg, 2002).

ideas about ocean resources and governance processes changed (Campbell et al., 2016).

For the EU the Atlantic is of critical geostrategic importance as demonstrated by the approval in 2011 of the Atlantic Maritime Strategy (EC, 2011) which became, together with its Action Plan, the umbrella for the cooperation with other Atlantic nations, leading to the Galway statement and the Atlantic Ocean Research Alliance between the EU, the United States of America (USA) and Canada (EU et al., 2013). Following this policy, the south Atlantic became a priority leading to cooperation both with Brazil⁴ and South Africa, which culminated with the signing of the Belém Statement on Atlantic Research and Innovation Cooperation in July 2017 and the launch of the European Union-Brazil-South Africa Atlantic Ocean Research and Innovation Cooperation (EU et al., 2017). Actually, in Atlantic South America cooperation with Brazil is clearly a priority for EU as shown by the joint Declaration by EC and Brazil (2015), showing Brazil to be a key partner in the region.

This article addresses three main questions: (i) How has ocean governance changed from an historical perspective? (ii) what changes did Blue Growth bring to the governance models of maritime space, particularly in the EU north-south Atlantic border? (iii) what are the driving forces leading these changes?

MATERIALS AND METHODS

Research was performed during a 5-year period between 2016 and 2020. The following methodology is based on that developed by Guerreiro et al. (2021) and utilised three main information sources: (i) Existence of ocean policies and/or national strategies for Blue Growth; (ii) Institutional frameworks for maritime and marine governance, namely on Blue Growth and MSP; (iii) Legal frameworks for maritime governance and maritime spatial planning. The research was carried out using three complementary processes:

- i The first process involved 2 years of desktop research (2016/17) focusing on European countries and addressing case studies in Europe (Portugal, Netherlands, England, and Norway) on the state of the art of Maritime Spatial Planning (MSP) implementation, governance models and institutional frameworks. Data were obtained both by specific questionnaires addressed to national authorities, through the institutional support of the Portuguese National Council for Environment and Sustainable Development and information available on institutional websites (Casimiro and Guerreiro, 2019).
- ii The second process (2018–2020) utilised the work being carried out as part of the EU research project PADDLE⁵ involving Portugal, France, Netherlands, Cape Verde, Senegal, and Brazil. Data were collected by local partners

⁴Cooperation with Brazil is strong and supported, in a first step, by the joint Declaration by EU and Brazil, The Atlantic – our Shared Resource: Making the Vision Reality.

⁵PADDLE: Planning in a liquid world with tropical stakes (www-ium.univ-brest.fr/paddle/project).

and EU project researchers, during dedicated secondments, after a content match/cross reference of established terms and concepts (Guerreiro et al., 2021).

For this article the information was analysed according to the following three main blocks and according to the criteria explain above was subject to coding of main contents and analysed using qualitative techniques (with NVivo software) selected criteria⁶:

State of the Art of Blue Economy Initiatives

- (i) National Ocean Strategies;
- (ii) Blue economy strategies/initiatives.

Mapping Government Structure and Mandates

- (i) Ministry/ministries with a mandate to promote blue economy and/or MSP policies;
- (ii) Institution/Agency with a mandate to develop and implement the blue economy/MSP;
- (iii) Coordinating structure for the blue economy and/or MSP.

Legal Analysis

Mapping the legal framework for:

- i Governance of Maritime Space;
- ii Spatial Planning/MSP.

After the analysis, the results of these main blocks were used to support interviews performed with the main institutions and agencies to clarify the actual range of action and legal enforcement.

The third process involved a comprehensive literature review being carried out on scientific data base using the following key words: ocean governance, blue economy, blue growth, maritime economy, marine governance, maritime spatial planning.

Information on legal and institutional frameworks may have changed and were last checked end of 2020.

RESULTS

Assessment of institutional, legal, and political instruments presented different realities and options, but all case studies demonstrated evidence of initiatives directed towards a new approach to the governance of maritime space and blue growth. **Tables 1, 2** summarise the information for England, France, Germany, Netherlands, Norway, and Portugal. **Tables 3, 4** summarise the information for Brazil, Cape Verde, and Senegal.

England

England's approach to maritime governance changed dramatically through the introduction of a holistic approach, in line with EU IMP, by approving the 2009 the Marine and Coastal Access Act which established a new institution, the Marine Management Organisation responsible for the development of

⁶See also Guerreiro et al. (2021).

TABLE 1 | Institutional framework for maritime space governance in European case studies.

Country	Ministries	Agencies	Coordination bodies	Other institutions	Observations
England	Ministry for the Environment, Food and Rural Affairs* Ministry of Defence Ministry of Housing, Communities and Local Government	Marine Management Organisation* Department for Environment, Food & Rural Affairs Department of Energy & Climate Change Department of Transport	Marine Management Organisation	Environment Agency Natural England Joint Nature Conservation Committee Inshore Fisheries Conservation Authorities	A MoU was celebrated among the several involved agencies to enforce cooperation. Department for Environment, Food & Rural Affairs is responsible for marine planning, Marine Management Organisation is responsible for preparing marine plans.
France	Ministry for the Sea* Ministry of Ecological and Inclusive Transition Ministry of Agriculture and Food	Directorate General for Maritime Affairs* Planning, Housing and Nature Directorate General of Infrastructure, Transport and the Sea Directorate of Marine Fisheries and Aquaculture	Interministerial Commission of the Sea	General Inspection of Maritime Affairs	Directorate General for Maritime Affairs leads MSP and coordinates National Ocean Strategy/Blue Book. Directorate General for Maritime Affairs has regional delegations
Germany	Federal Ministry of Interior, Building and Community* Federal Minister for Economic Affairs and Energy* Federal Minister of Transport and Digital Infrastructure* Federal Ministry of Food and Agriculture Federal Minister for the Environment, Nature Conservation and Nuclear Safety	Federal Maritime and Hydrographic Agency (BSH) Waterways and shipping Directorate-General	No coordinating body	Directorate-General WR	Federal Ministry of Interior, Building and Community is responsible for MSP Federal Minister for Economic Affairs and Energy coordinates Maritime Economy Federal Minister of Transport and Digital Infrastructure coordinates Maritime Agenda 2025 Federal Ministry of Food and Agriculture is responsible for fishing and aquaculture Federal Maritime and Hydrographic Agency (BSH) is the agency responsible for MSP WR is responsible for water management
Netherlands	Ministry of Infrastructure and Water Management* Ministry of Economic* Affairs and Climate	Directorate General for Public Works and Water Management*	Interdepartmental Directors' Consultative Body North Sea*	Directorate-General for Nature, Fisheries and Rural Affairs	Regional Articulation through North Sea Commission and the North Sea Region Strategy
Norway	Ministry of Climate and Environment Ministry of Trade, Industries and Fisheries Ministry of Petroleum and Energy	Department for Marine Management and Pollution Control	Inter-Ministerial Steering Committee*	Department for Fisheries Department for Aquaculture Institute of Marine Research Norwegian Maritime Authority Energy and Water Resources Department	Ministry of Climate and Environment leads MSP Ministry of Trade, Industries and Fisheries and Ministry of Petroleum and Energy lead Ocean Strategy and Blue Growth
Portugal	Ministry of the Sea* Ministry for the Environment and Climate Action	Directorate General for Maritime Policy* Directorate General of Natural Resources, Security and Maritime Services	Interministerial Commission for Maritime Affairs	Portuguese Institute of the Sea and Atmosphere Environment Agency National Institute for Nature Conservation and Forestry	Directorate General for Maritime Policy leads Ocean Strategy, Blue Growth and MSP Directorate General of Natural Resources, Security and Maritime Services co-leads MSP

*Leading Agency/Department/Institution.

TABLE 2 | Legal framework for blue growth and maritime space governance in European case studies.

Country	Ocean/Blue growth Policies/Strategies	Main legal framework	Complementary/Subsidiary legislation/Regulation	Observations
England	"Maritime 2050 – Navigating the Future".	Marine and Coastal Access Act	Marine and Coastal Access Act embraces EU MSP Directive	The South Inshore and Offshore Marine Plan Offshore Plans were combined into the second English marine plan to be adopted in England.
France	National Ocean Strategy/Blue Book	Environmental Code Transposed EU Directive on MSP Decree No. 2017-724 of 3 May 2017 integrating maritime planning and the action plan for the marine environment in the sea front strategic document	National Strategy for Sea and Coast Sea Front Strategies Sea Basin Strategies	Four sea-basin strategies (East Channel – North Sea, North Atlantic-West Channel, South Atlantic, Mediterranean)
Germany	Maritime Development Plan Maritime Agenda 2025	Federal Spatial Planning Act	Maritime Spatial Plan for the North Sea Maritime Spatial Plan for the Baltic Sea	As a Federal State the territorial sea of Germany includes spatial plans under the specific legislation of each state.
Netherlands	Dutch Maritime Strategy The 2024–2030 offshore wind energy road map	National Water Act	National Water Plan Policy Document for the North Sea 2016–2021	Netherlands' Maritime Spatial Plan is in force
Norway	Ocean Strategy	Planning and Building Act Resolutions of the Parliament White papers on MSP	Ocean Energy Act	Spatial Plans for the three maritime areas considered are in force
Portugal	Ocean Strategy	Maritime Spatial Planning and Management Law	Law Decree Regulates Maritime Spatial Planning and Management Law	Maritime Spatial Plan is in force, with the exception of Azores Islands sub-region

marine polices for English waters. Following this, the Marine Policy Statement was approved in 2011 providing the framework for maritime spatial management plans and the marine licensing system. More recently in 2019, the "Maritime 2050 – Navigating the Future" strategy was approved under the responsibility of the Department for Transport. With several agencies involved in maritime space governance a Memorandum of Understanding (MoU) was signed among the several agencies involved to enforce institutional cooperation.

France

France has a long and solid tradition of land spatial planning, going back to the 50's and has developed a comprehensive legal framework for coastal management, supported by a "National Strategy for Sea and Coast," which is complemented by the "Sea Front Strategies" and the "Sea Basin Strategies." Embracing the blue economy and blue growth, France developed a "National Strategy for the Oceans/Blue book" in 2009. In 2016 the alteration of the French Environmental Code introduced the notion of maritime spatial planning and points to the Sea Basin Strategies documents as the main tools through which MSP is implemented. Recently in July 2020, the new French government created the Ministry for the Sea with a clear mandate to increase maritime economy and blue growth, as well as on ocean governance and MSP.

Germany

Germany developed a Federal Spatial Planning Act in force since 2004 and amended in 2017, to comply with the EU MSP Directive, under which the Maritime Spatial Plans for the

Baltic Sea and the North Sea are developed. According to this Act, the Federal Government is responsible for the MSP in the German exclusive economic zone (EEZ) with the Federal Ministry of the Interior, Building and Community responsible for MSP. As a Federal State the territorial sea of Germany includes spatial plans of the coastal federal states under specific legislation for each state. Addressing Blue Growth, Germany in 2011 approved a national strategy for an integrated maritime policy through the "Maritime Development Plan." This strategy was complemented in 2017 with the Maritime Agenda 2025, aimed at strengthening the competitiveness of the strong German maritime industry whilst giving equal consideration to the goals of economic growth. For the North Sea, priority areas are shipping, cables/pipelines, and offshore wind farms and for the Baltic Sea the priority areas are shipping and offshore wind farms.

Netherlands

Netherlands developed a comprehensive legal framework on maritime policy and governance supported by three main pillars: the "National Water Act," the "Land Use and Planning Act," and the "National Maritime Strategy." The National Water Plan provides a policy framework for MSP based on the Water Act and includes a Policy Document first published in 2009 and revised every 6 years. The Policy Document includes Netherlands' Maritime Spatial Plan and reflects the Dutch Government's policy choices for the North Sea. The Ministry of Infrastructure and Water Management heads the Interdepartmental Directors' Consultative Body North Sea which is the MSP authority. The Dutch Maritime Strategy 2015–2025 sets the strategic goals for the maritime economy and blue growth led by the

Ministry of Economic Affairs and Climate. Being Netherlands, an economy strongly supported by the maritime cluster composed of shipping and harbours and a strong bet on renewable energies, namely offshore wind farms is in place. As the North Sea is one of the busiest in the world, surrounded by several countries both Netherlands and Germany comply with regional cooperation through the North Sea Commission and the North Sea Region Strategy.

Norway

Norway is one of the world leaders of ocean economy: Oil and Gas, fisheries, shipping, ship building and repair together with high-level technical ocean industries make the core of the ocean cluster (EC, 2021a), whose industries represent 70% of exports income. Moreover, Norway is one 14 the countries represented on the High-level Panel for a Sustainable Ocean Economy (Ocean Panel). The new Ocean Strategy (Norwegian Ministry of Trade, Industry and Fisheries and Norwegian Ministry of Petroleum and Energy, 2017) assumes Blue Growth through green restructuring, aiming at becoming the world's foremost ocean economy. Sea Food/Aquaculture, Subsea technology and mineral resource exploitation are earmarked as the sectors to lead their Blue Growth strategy. Three ministries and several

government agencies are involved in the Norwegian marine governance framework, each with different responsibilities (see **Table 1**). Norway also adopted MSP and the design of the management plans is coordinated by an Inter-Ministerial Steering Committee, chaired by the Minister for Environment and Climate Change. The Planning and Building Act from 2008 covers both terrestrial and marine spatial planning. The Norwegian maritime space was divided into three areas, according to geographical characteristics: 1 – Barents-Lofoten Sea, 2 – Norwegian Sea, and 3 – North Sea and Skagerrak. Parliamentary resolutions and authorisations, commonly known as “white papers,” set the goals and targets for MSP which are already in force.

Portugal

Portugal developed its first Ocean Strategy back in 2006, being one of the first EU countries to do so. The third generation of Ocean Strategies (2021–2030) is now entering into force and Blue Growth is one of the main cores, focusing on renewable energies, aquaculture, blue biotechnology, nautical tourism, and the traditional sectors of harbours and shipping. The institutional framework is clear with a Ministry for the Sea and two new institutions created, namely the General Directorate

TABLE 3 | Institutional framework for maritime space governance in Tropical Atlantic case studies.

Country	Ministries	Agencies	Coordination bodies	Other institutions	Observations
Brazil	Ministry of Defence Ministry of Tourism Ministry of Environment Ministry of Infrastructure Ministry of Mines and Energy Ministry of Science, Technology, Innovations and Communications Ministry of Agriculture, Livestock and Supply	Department of Fisheries Development and Planning Department of Aquaculture Development and Planning Brazilian Institute of Environment and Renewable Natural Resources National Waterway Transportation Agency National Agency of Petroleum, Natural Gas and Biofuels National Mining Agency	Interministerial Commission for Sea Resources*	Department of Aquaculture and Fisheries Registration and Monitoring Mineral Resources Research Company Department of Science Policies and Programmes Nautical Tourism Technical Working Group	Interministerial Commission for Sea Resources is empowered to develop MSP. Department of Science Policies and Programmes includes the General Coordination of Oceans, Antarctica and Geosciences, responsible for research policies in the areas of Oceans
Cape Verde	Ministry of Maritime Economy*	Directorate General for Maritime Economy* Directorate General for Marine Resources*	No coordinating body	Marine Institute Maritime and Port Institute National Institute for Territorial Management Special Economic Zone of Maritime Economy National Directorate of Environment	MSP will be developed by Directorate General for Maritime Economy with the support of National Institute for Territorial Management.
Senegal	Ministry of Fisheries and Maritime Economy* Ministry of local communities and Land Use Planning Ministry of the Environment and Sustainable Development Ministry of Oil and Energy	National Agency for Maritime Affairs	No coordinating body	National Agency of Aquaculture Directorate of Marine Fisheries Directorate of Management and Exploitation of the Seabed National Agency for Spatial Planning Directorate of Marine Protected Areas	There is a High Authority Responsible for the Coordination of Maritime Security, Maritime Security and the Protection of the Marine Environment

TABLE 4 | Legal framework for blue growth and maritime space governance in Tropical Atlantic case studies.

Country	Ocean/Blue growth Policies/Strategies	Main legal framework	Complementary/Subsidiary legislation/Regulation	Observations
Brazil	National Maritime Policy National Policy for Sea Resources	National Coastal Management Plan	Sectorial Plan for Sea Resources	No dedicated Blue Growth Strategy but some sectoral plans are in course: (i) Evaluation of the Mineral Potential of the Brazilian Legal Continental Platform; (ii) Blue Biotechnology; (iii) Aquaculture and Sustainable Fisheries
Cape Verde	Chart for the promotion of Blue Growth in Cape Verde National Blue Economy Investment Plan and the Programme for the Promotion of the Blue Economy	Law on Urban and Spatial Planning Spatial Plans for Coastal Zones and the Adjacent Sea (POOC_M)	Regulatory Decree for Land and Urban Planning	Specific legislation and regulation for MSP is being developed
Senegal	No National Maritime Policy	The Code of Urbanism Environment Code	Regulatory decree of the Code of Urbanism	National Strategy for Marine Protected Areas

for Maritime Policy, responsible for national strategies and blue growth policies, and the Directorate General of Natural Resources, Security and Maritime Services, responsible for the implementation of MSP. The MSP, Management Law and its regulatory decree were approved in 2014 and the national maritime spatial plan was approved in 2019.

Brazil

Brazil did not develop a specific Blue Growth Strategy; however, it has a long-established Approves the National Maritime Policy (PMN), 1994 and Approves the National Policy for Sea Resources (PNRM), 2005, which has established coastal conservation and management as a national priority since the late 80's. Furthermore, several programmes addressing Blue Economy and Growth are in progress: (i) Evaluation of the Mineral Potential of the Brazilian Legal Continental Platform; (ii) Blue Biotechnology; (iii) Aquaculture and Sustainable Fisheries, in addition to these initiatives there are also several public and private projects focused on renewable energies at sea. Brazil, much like other south American Atlantic nations (e.g., Argentina) did not create a ministry for the sea and responsibilities are spread over seven different ministries, although more weight is given to the Ministry of Defence⁷ with the permanent secretariat of the Interministerial Commission for Sea Resources, where 13 ministries have a seat, headed by the civil house of the President of the Republic. Interministerial Commission for Sea Resources is the leading structure dedicated to coordinate sectoral policies and recently created a working group to develop a proposal for legislation on Maritime Spatial Planning (Guerreiro et al., 2021).

Cape Verde

The “Chart for the promotion of Blue Growth in Cape Verde” approved in 2015 followed by the “National Blue Economy

⁷The other six ministries are: (i) the Ministry of Mines and Energy (oil and gas exploitation); (ii) the Ministry of Infrastructure (ports and shipping); (iii) the Ministry of Agriculture, Livestock and Supply (aquaculture and fisheries); (iv) the Ministry of Environment (nature conservation); (v) the Ministry of Tourism (tourism policies and nautical tourism); and (vi) the Ministry of Science, Technology, Innovations and Communications (General Coordination of Oceans research, Antarctica and Geosciences).

Investment Plan” and the “Programme for the Promotion of the Blue Economy” in 2018, are the three pillars used to enhance the Blue Economy and Blue Growth that Cape Verde clearly embraces. Furthermore, this political choice was supported at the governmental and institutional level, with the creation also in 2018, of a Ministry for Maritime Economy alongside two new agencies: (i) Directorate General for Maritime Economy, mandated to coordinate and develop MSP and (ii) Directorate General for Marine Resources instructed to launch a new maritime governance framework. Since 2006 Cape Verde has had a solid legal framework for land and urban spatial planning, with spatial land and coastal plans developed by the National Institute for Spatial Planning. Directorate General for Maritime Economy will coordinate with National Institute for Spatial Planning and Directorate General for Marine Resources maritime spatial planning and will propose the legal framework, presently under development. Recently Cape Verde created the Special Economic Zone of Maritime Economy in Saint Vicente. Finally, it should be highlighted that in 2018, the European Commission and the government of the Republic of Cape Verde signed a new research and innovation cooperation arrangement: the Mindelo. This arrangement aims at strengthening and enhancing research and innovation cooperation for blue growth.

Senegal

According to the World Bank, Senegal is one of the top ten growing economies, largely supported by the maritime economy namely oil exploitation, fisheries, and coastal tourism (Diedhiou and Yang, 2018). Much like Cape Verde, in 2019 Senegal gave clear signs of embracing the Blue Economy as the new government included a Ministry for Fisheries and Maritime Economy. However, with oil exploitation assigned to another ministry and a further five ministries⁸ involved in maritime governance, there is no coordinating body. No specific ocean strategy is yet developed, but the medium and long term National Plan (Plan National Émergent) singles out fisheries, aquaculture

⁸The other four ministries are: Ministry of local communities and Land Use Planning; Ministry of the Environment and Sustainable Development; Ministry of Oil and Energy; Ministry of Tourism and Airways.

and coastal tourism as strategic areas to develop together with shipping and seabed mineral exploitation. Senegal also has a strong focus on urbanism and spatial planning with a clear system and instruments in place, however, coastal spatial management is long absent, leading to several illegal buildings and logging on the coastline, particularly along the most attractive touristic locations (Guerreiro et al., 2021). On the other hand, marine conservation has been a clear political concern and the Ministry for the Environment and Sustainable Development created a national strategy for marine protected areas in 2013.

DISCUSSION

The Historical Perspective

It is not the first time the world faces a “Blue Growth Revolution”; historical facts of the “Discovery Era” are well known, changing the global maritime commerce and economy, as well as Ocean Governance, from the Tordesilhas (*Mare Clausum*) Treaty to *Mare Liberum*. However, little is said about what made it possible - navigation, which was coastal, became oceanic based on advances in three sciences: (i) cartography, (ii) nautical science, and (iii) naval architecture. This was the first true affirmation of science as an instrument for the control of the seas and as a State’s policies (Albuquerque, 1983). The central question, from a historical perspective, is that the uses of the oceans were, for centuries, mainly two: fisheries and commerce, the latter being the dominant issue in the geostrategy of nations and determining its military use. This perspective was essentially maintained until the end of the World War II when the 1945 Truman Declaration, claimed the right to explore oil within the continental shelf. As stated by Campbell et al. (2016), politically, existing national and multinational oceans governance is a product of post-World War II constructions of the nation state and of the international order established by the UN. The point to highlight is that what triggered the move to a new approach for the governance of the oceans and maritime space was, again, technology development allowing a new use of maritime space and its economic return.

In the past two decades, technological developments have increased not only uses of the maritime space, from wind farms to offshore aquacultures, but established new frontiers, as deep-sea mining is reaching areas beyond national jurisdiction and forcing new rules that are being negotiated in the International Seabed Authority. These new rules may or may not uphold the common heritage principle; the evidence is that social and political ideas about ocean resources and governance processes changed; to understand the scope and impact of this dramatic change, it is fundamental to put it in a historical perspective (Campbell et al., 2016). Blue Growth Strategies, arising and developing almost in every continent and ocean, encompass what can be considered as a new (third) wave of “Blue Growth Revolution.”

The Rise of Blue Growth and Assessment of Key Drivers

The Blue Growth Strategy launched by the EU is, from the very beginning, focused in enhancing economy and creating new jobs as it is clear from the 2012 Limassol Declaration (EC, 2012b) “A Marine and Maritime Agenda for Growth and

Jobs” stating that: “(i) (...) the current economic context requires the European Union to find a quick and effective path to recovery based on smart, sustainable and inclusive growth; (ii) (...) they must address the objectives of the Europe 2020 strategy from innovative perspectives that can unlock new sources of growth and jobs; (iii) (...) the marine and maritime sectors are decisive for the growth and employment of the EU economy”. Furthermore, by defining five strategic sectors, the EU appealed to the leading innovating sectors, from blue biotechnology to renewable energies, offshore aquaculture, and deep-sea mining. Again, scientific innovation and new technology are demonstrated to be key in not only creating added value, but also promoting new uses of the maritime space.

All European cases studied, from Norway to Portugal, began to develop their main political instrument, an Ocean Strategy or similar, even before the development of a legal framework for maritime spatial planning (MSP). Specifically, the key issue is the new uses of maritime space, substantially enlarging the universe of stakeholders involved, demanded new instruments for the governance of the maritime space to avoid conflict of uses and stakeholders and guarantee the safety of investments and trust of investors – that is the aim of the 2014/89/EU Maritime Spatial Planning Directive. Accordingly, MSP soon became the core zoning instrument to accommodate central sectoral political planning drivers, to benefit industry development (Jones et al., 2016). This clearly led to a top-down approach, rather than a more democratic involvement of stakeholders in the planning (Flannery et al., 2019). Moreover, soon industry became a priority over a more sustainable ecosystem approach, as became clear from the expansion of offshore wind farms in Netherlands (Vrees, 2019; Spijkerboer et al., 2020), or in Portugal, where the offshore wind farm project Windfloat⁹ obliged local artisanal fishermen to abandon their traditional fishing grounds, after negotiating a compensation of 1,2 million euro. This highlights the priorities for Blue Growth, clearly expressed in Portuguese MSP legislation (Diário da República, 2014): “when there is a case of conflict between uses or activities, in progress or to be developed, in the national maritime space, in determining the prevailing use or activity, the following criteria of preference are used in determining the prevailing use or activity, provided that the good environmental status of the marine environment and coastal areas is ensured: Greater social and economic advantage for the country, namely by creating jobs and qualifying human resources, creating value and contributing to sustainable development (...)” Although always appealing to the sustainable development and an ecosystem approach, the truth is that the driver is economics, following the blue growth agenda.

Rio +20 Conference pushed the globalisation of the Blue Economy and several initiatives are now going on, from ocean to ocean, also highlighted with the approval of the Africa Blue Economy Strategy in 2020 (African Union InterAfrican Bureau for Animal Resources, 2019).

In the south Atlantic and particularly in Africa, the move towards Blue Economy started in 2012 with the approval of the Africa Integrated Maritime Strategy 2050 (Africa Union Commission, 2012) and the assumption that the

⁹<https://www.edp.com/en/innovation/windfloat>

Blue Economy was vital for the development of the African continent (Republic of Seychelles, 2014). In 2016 the United Nations Economic Commission for Africa draw the Blue Economy for Africa Roadmap (United Nations Economic Commission for Africa, 2016). Finally, the Sustainable Blue Economy Conference that took place in Nairobi, Kenya in 2018,¹⁰ under the theme "*Developing a sustainable blue economy; increasing momentum for Africa's Blue Growth*" (Sustainable Blue Economy Conference Technical Documentation Review Committee, 2018) paved the way for the approval of the Africa Blue Economy Strategy (African Union InterAfrican Bureau for Animal Resources, 2019). The Africa Blue Economy Strategy focuses on five critical blue economy vectors, considered as thematic areas: (i) Fisheries, aquaculture and ecosystems conservation; (ii) Shipping, transportation and trade; (iii) Sustainable energy, extractive minerals, gas, innovative industries; (iv) Environmental sustainability, climate change, and coastal infrastructure, and (v) Governance, Institutions and social actions. This approach is in line with the Africa Agenda 2063 (Africa Union Commission, 2015) which already highlighted that: "*Africa's Blue/ocean economy, which is three times the size of its landmass, shall be a major contributor to continental transformation and growth, through knowledge on marine and aquatic biotechnology, the growth of an Africa-wide shipping industry, the development of sea, river and lake transport and fishing; and exploitation and beneficiation of deep sea mineral and other resources.*" It becomes clear that, also in Africa, blue economy is seen as a key driver for economic growth and job creation, overcoming the environmental sustainability dimension, which becomes evident as all case studies in Africa, although embracing blue growth and adapting government structures accordingly, did not develop any legal framework for MSP, although several initiatives are in course in some of the countries (e.g., Cape Verde). The exception is South Africa, benefiting from the European Union-Brazil-South Africa Atlantic Ocean Research and Innovation Cooperation, became, in 2018, the first country in Africa to develop a MSP legal framework¹¹ together with a national policy to support Blue Growth: (Operation Phakisa¹²) revealing four critical areas: (i) Marine Transport and Manufacturing; (ii) Offshore Oil and Gas Exploration; (iii) Aquaculture; and (iv) Marine Protection Services and Ocean Governance.

Surprisingly, Atlantic south America, particularly Brazil, Uruguay, and Argentina, seem a little behind this Blue Growth Agenda, although some steps are being taken. Brazil, the principal partner of EU in the region,¹³ seems to take the lead with several specific projects going on (offshore aquaculture, ocean renewable energies and blue biotechnology) and it has long developed a National Maritime Policy and a National Policy for Sea Resources (Guerreiro et al., 2021).

It is now clear that, following Rio +20, the term and concept of Blue Economy, increased its circulation and acceptance all

over the world. Governments of coastal states and corporate actors, from ocean to ocean, are promoting the Blue Growth agenda by framing the oceans as a place for good business, "ripe for development" and teeming with opportunity to stimulate economic growth. Since 2016 the OECD claimed that the ocean economy is the answer to a slowing global economy strongly linking this growth to innovation networks in key sectors (OECD, 2016, 2019), matching the Blue Growth approach of the EU. As Silver et al. (2015) highlighted, the EU has perhaps most overtly tied the term blue economy to capitalisation and accumulation by naming and prioritising five key "Blue Growth" sectors of the economy: biotechnology, renewable energy, coastal and marine tourism, aquaculture, and mineral resources (European Union, 2014; EC, 2020).

This relationship between government policies, innovation, investors and blue growth has become increasingly close and as Van den Burg et al. (2017) refer: "*these sectors are still in development and various risks reduce the willingness to invest. Risk mitigation should be seen as a shared responsibility of entrepreneurs, investors and governments. Government support must go further than financial support for research and development or technological demonstration projects. Proven technologies get stuck in the Valley of Death as investors alone are not willing to take the risk associated with upscaling of promising technologies. Tied in a reciprocal relationship, governments need to attract private investors—their capital, knowledge, and networks—to further grow of the Blue Growth sectors while investors need stable, predictable, and effective government support schemes to mitigate their financial risks.*"

The truth is, as policies and governance practices shape economy and entrepreneurship innovation, the reverse is also true; specific economic sectors, development initiatives, or innovation agendas condition political discourses and influence project funding, as well as suggesting governance mechanisms and instruments seen as most appropriate to their interests.

Changes in Governance Framework in Response to the Blue Growth Agenda¹⁴

The integrated Maritime Policies and Blue Growth, quickly proved to have a deep impact on the organisational structure of governments, institutions and new legal frameworks on maritime and marine governance, namely Maritime Spatial Planning (MSP). In this way, and in addition to the specific legal framework on the planning and licensing of activities in maritime space, several governments were obliged to either create specific ministries for the sea, or at least, specific agencies. Accordingly, institutional networks have evolved with the creation of new agencies with specific competences in the development of national strategies for the ocean, implementation of the Blue Growth Strategy and maritime spatial planning. In fact, the need for institutions with a clear mandate for MSP

¹⁰<http://www.blueeconomyconference.go.ke/>

¹¹ Act No. 16 of 2018: Marine Spatial Planning Act, 2018.

¹²<https://www.operationphakisa.gov.za/>

¹³ See the joint Declaration by EU and Brazil, The Atlantic – our Shared Resource: Making the Vision Reality.

¹⁴ The institutional and legal frameworks refer to December 2020 and may have change when this article is published.

and strong supporting legislation, has been pointed out since the very beginning, as a *sine qua non-condition* for the success of

the maritime planning process and, consequently, Blue Growth Strategies (Ehler and Douvère, 2009). Also, the need to improve management authority, management capacity and resources, together with the commitment of officials and intergovernmental coordination/collaboration, was considered critical in order for the successful implementation of MSP (Liu et al., 2011). More and more actors stand for the need to create an authority for MSP as a guarantee of the success of the process and interface among agencies and stakeholders (Albotoush and Shau-Hwai, 2021). This impact at the institutional level was anticipated by the EU itself by creating Directorate-General for Maritime Affairs and Fisheries, upgrading and extending the mandate of the “old” Directorate-General for Fisheries.

This reshaping of the institutional framework did not come without tensions among “new” and “old” agencies, particularly where mandates over the maritime and marine space are split between several ministries as it is the case of Germany and no coordinating body was created (Aschenbrenner and Winder, 2019). In England, the excessive complexity of the institutional framework led the government to create the Marine Management Organisation, fully empowered for marine regulation, MSP, marine licensing and maritime conservation zones. Nevertheless, there was a need to put in place an MoU among the several agencies with mandates over marine space, precisely to prevent possible institutional conflicts (Boyes and Elliott, 2015). Often these tensions arise among agencies confronting the blue growth economic approach vs. the ecosystem-based management of marine space. Moreover, this is also a confrontation putting a maritime vs. a marine vision at loggerheads, ending up to be conflict between soft sustainability vs. hard sustainability (Frazão-Santos et al., 2014a,b). Tensions arose since the very beginning even within EU, more precisely between the Directorate General of Environment and the new Directorate General for Maritime Affairs and Fisheries particularly on the application of the Marine Strategy Framework Directive and MSP directives (De Santo, 2015). Moreover, these tensions among governmental agencies are a sign that there is a need to rethink the institutional framework, as well as the need for new legal frameworks regarding marine governance. As Kelly et al. (2018) pointed out, the rethinking of both institutional and legal frameworks for marine governance is still in its infancy and will involve transformative change of institution values and practices.

At the higher political level, the two countries with the largest EEZ's in EU, France and Portugal, both with a particular historical and geostrategic interest in the south Atlantic maritime space, clearly recognised the political importance of ocean policies by creating specific ministries and specific agencies during last years. Several other countries, although not changing government structure, reshaped ministries mandates in order to respond the Blue Growth challenges: this is the case of Italy with the Ministry for the Environment, Land and Sea protection; Netherlands, with an enlarged mandate for the Ministry of Infrastructure and Water Management; Spain where the Ministry of Ecological Transition created a specific General Directorate for the Sustainability of the Coast and the Sea, and England enlarged the mandate of the Ministry for the Environment, Food and Rural Affairs, giving it the head of the new Marine Management Organisation. It

becomes clear that there is a trend to assign new competences to the ministries of environment over the marine space, whenever a specific ministry for the sea is not in charge.

Nevertheless, cross cutting sectoral policies and a new universe of stakeholders, demanded both horizontal and vertical coordination to facilitate governance, but reality revealed that there is an increased difficulty in coordinating policies at the horizontal level compared with the vertical level. Martino (2016) addressing this issue, found that some regions have developed institutions based on an inter-sectoral coordination committee or an advisory body, while others have chosen an internal proactive collaboration to resolve conflicting interests between directorates. Moreover, these regions are also extending coastal management into maritime spatial planning, trying to tackle conflicts emerging from land/sea interactions based on two different spatial planning systems and instruments (Casimiro and Guerreiro, 2019). A wide range of authorities, from fisheries to environment and ecology, maritime authorities, shipping, and harbours industries, councils and urban planning are involved in the administration of maritime and coastal space, a mishmash that Freire-Gibb et al. (2014) considered “institutional ambiguity.” Peart (2017), when pointing out this increasing complexity, suggested the establishment of a governance entity with certain powers and representatives from different sectors. Several governments follow this path and create Interministerial Commissions, or similar bodies, in order to articulate sectoral policies, as is the case of France, Netherlands, Norway, and Portugal. In England, as seen, despite the creation of the Marine Management Organisation several entities were involved in MSP/Blue Growth strategies and the government had to promote MoU between the entities to facilitate the articulation of responsibilities (Boyes and Elliott, 2015).

Not surprisingly in the African Tropical Atlantic, changes began to arise at the Governmental level, as in Senegal and Cape Verde, with the creation of specific Ministries dedicated to the Maritime Economy also under the benefit of the EU Atlantic Maritime Strategy and cooperation with EU. Cape Verde can be considered a case study as it developed a full reform of political and institutional frameworks following the Blue Economy, not only by creating a Ministry for Maritime Economy and a dedicated agency also empowered for MSP, but also by developing specific strategic policies such as: (i) the Charter for the promotion of Blue Growth in Cape Verde; (ii) National Blue Economy Investment Plan, and (iii) the Programme for the Promotion of the Blue Economy. Following these policies, Cape Verde is presently developing the proposal for MSP legislation. That move is also clear on the south Atlantic coast where the Benguela Current Convention the Marine Spatial Management and Governance Program¹⁵ is supporting the development of MSP and National Ocean Strategies in Angola, Namibia, and South Africa.

In Atlantic South America, Brazil, although has no specific Ministry for the Sea exists and competences are spread throughout seven ministries. However, an Interministerial Commission for Sea Resources coordinates sectoral policies and

¹⁵<http://www.benguelacc.org/index.php/en/marisma>

was recently empowered to develop MSP specific legislation. Nevertheless, Brazil is behind the international schedule on MSP and the process may have limited progress due to institutional conflicts and a poor understanding of the MSP process (Gerhardinger et al., 2019). Argentina, despite its large EEZ of 2,860,000 Km², did not develop a specific Blue Growth Strategy nor MSP¹⁶ and, as in Brazil, competences are split between 7 ministries, although the lead is taken by the Ministry of Environment and Sustainable Development. Nonetheless, the country has a Federal Integrated Coastal Management Strategy, agreed upon within the framework of the Federal Environment Council and endorsed by Resolution No. 336/2016. Brazil and Argentina were classified by Shinoda (2018) as being in the pre-plan development step according to IOC/UNESCO criteria. Uruguay, similarly, to Brazil and Argentina, also splits governance between seven ministries addressing the maritime sectors but the country did not develop a specific Blue Growth strategy or MSP. However, regional and transboundary cooperation between Brazil and Uruguay is on course and, in December 2019, during a binational training course, promoted by IOC/UNESCO, experts and official representatives from Brazil and Uruguay shared experience and knowledge on processes related to MSP and Sustainable Blue Economy in the region¹⁷ and both countries committed to having their marine spatial plans ready by 2030. Uruguay also participated in the Food and Agriculture Organisation initiative for Global Blue Growth¹⁸ to Latin America and Caribe.

It is also clear that the main instrument used to successfully implement the Blue Growth strategy is Maritime Spatial Planning, now going on in more than 70 countries all over the world,¹⁹ trying to avoid conflicts among users/stakeholders, guarantee the safety of investments and promote a sustainable use of the maritime space. However, reality shows that MSP became an instrument of sectoral planning focused on zoning and, as Trouillet (2020) highlighted, MSP takes on the appearance of a process benefiting for all, reinforced by a consensual narrative, when in reality MSP responds to injunctions emanating either from sectoral economic logics or from conservationist objectives and rarely both. These negative evaluations are leading to growing scepticism among scholar communities that MSP is not facilitating a paradigm shift towards publicly engaged marine management, and that it may simply repackage power dynamics in the rhetoric of participation to legitimise the agendas of the dominant actors (Flannery et al., 2018).

It becomes clear that scientific innovation led to new uses of the sea, which led to a dramatic change in the legal and institutional frameworks for the governance of maritime space. Merrie and Olsson (2014), drawing on innovation theory, trace the emergence and spread of MSP as an idea and technology. The authors identify what they call “institutional entrepreneurs”—a

key network of global actors in the marine community involved in knowledge exchange and promotion of MSP and conclude for the need to address the intersection between technological, social, and ecological systems when studying the spread of innovations that can benefit both people and the planet. That also underlines the need for regional and transboundary cooperation, both at the level of regional seas and oceans. Tatenhove et al. (2014) elaborating on regional cooperation for European seas, concluded that increasing stakeholder participation, a much-desired development in the regional organisation of marine management as expressed by the stakeholder community, will increase the costs of the policy making process. If stakeholder participation is not embedded in a wider institutional setting in which the participation of stakeholders is directly related to the policy process and the degree to which decisions taken are binding, the increase of costs does not lead to a smother running model. Moreover, the transboundary dimensions of blue growth and MSP challenges the inter-jurisdictional relations and governance leading to the development of inter-relations, not just of the geographies and maritime resources and activities of the marine areas concerned, but also of the systems of data management, governance and policymaking and of the participants involved as officials or stakeholders, including their means and cultures of exchange. However, the imperative for neighbouring administrations to work in a transboundary manner is not easily turned into practice. Difficulties may be faced that are procedural, such as attempting to match different administrative systems and processes, technical, such as drawing together data and finding effective means of communication, and political, such as managing divergent policy priorities across borders. Most fundamentally, there is likely to be continuing tension between authorities maintaining their territorial interests and yet seeking to work towards shared interests (Jay et al., 2016).

CONCLUSION

Until the turn of the century the existing national and global oceans governance was a product of the post-World War II international order, established by the UN where UNCLOS set the rules for the governance of national maritime spaces, as well as for the areas beyond national jurisdiction. However, particularly in the past two decades, technological developments have increased not only uses of the maritime space, from wind farms to offshore aquacultures, but established new frontiers, as deep-sea mining is reaching areas beyond national jurisdiction and forcing new rules that are being negotiated in the International Seabed Authority.

As this analysis highlights, the economy of the oceans and blue growth is today an imbricated network of political decisions, investments driven by the state and private corporations as well as scientific and technological innovation. This in turn, ends up having an increasingly dramatic impact on the reformulation of the maritime space governance network, both at the level of institutions and legal frameworks, and in the governments structures and policies themselves. In short: it is the governance of the oceans that is being reshaped.

¹⁶A first reference study for maritime spatial planning was developed in 2011 entitled “Lineamientos para la incorporación de la problemática del mar Argentino en la planificación territorial” (Koutoudjian, 2011).

¹⁷<http://www.mspglobal2030.org/brazilian-and-uruguayan-experts-advance-recommendations-for-msp-and-sustainable-blue-economy/>

¹⁸<http://www.fao.org/zhc/detail-events/en/c/233765/>

¹⁹<http://www.mspglobal2030.org/msp-roadmap/msp-around-the-world/>

One of the key issues to highlight in the governance of maritime space is that if Blue Growth shows a top-down approach, with centralised command from governments and economic power, it also had a boomerang effect at the institutional level up to the top. Effectively, governments had to change the institutional framework in order to adapt to the demands and challenges of new blue economy: (i) spatial planning and licensing of maritime space, together with the regulation and promotion of Blue Growth, demanded specialised institutions (e.g., General Directorate for Maritime Policy and/or General Directorate for Maritime Economy); (ii) the growth of stakeholders and potential for conflicts demanded new schemes for intersectoral coordination both at the governmental level as at the institutional/agencies level (e.g., Intersectoral Commissions, Interministerial Commissions, MoU among agencies, regional coordination commissions); (iii) the change in government structures itself with the creation of Ministries for the Sea and/or Maritime Economy or at least the enlargement of mandate of existing ministries (e.g., Ministry of Environment); (iv) the need for regional and transboundary cooperation and new governance mechanisms to achieve it.

Although advancing at different speeds, Blue Growth strategies and their instruments, particularly its main legal instrument, MSP, spread from the Atlantic to the Pacific and Indian Ocean, and is reshaping ocean governance in all continents. However, responding to the Blue Growth agenda, MSP becomes a technical issue, focused on the allocation of spaces rather than on good governance Flannery et al. (2019). Due to the dominance of Blue Growth discourse within, particularly in the EU, the problems to be addressed by MSP no longer relate to good environmental governance, but rather, are concerned with creating the appropriate conditions for the rapid expansion of particular industries. The EU approach to Blue Growth MSP clearly influenced the Atlantic, particularly in Africa, as the cases studied show a leading drive for the maritime economy which is encouraged by the vision of Africa's Blue Growth Strategy and the SIDS positioning towards Blue Growth, since 2012 Rio +20 UN Conference. The EU Atlantic Maritime Strategy together with the Belém Declaration clearly influenced the path for Blue Growth from Cape Verde to South Africa, either by cooperation of the EU with several countries and/or bilateral cooperation of EU countries with ancient colonies, as it the case of England, France, Germany, and Portugal. Likewise, this influence is extending to Latin America, particularly to Brazil but also on the Latin-America/Caribbean axis states, driven by the global initiative UNESCO/IOC/EU for MSP. Somehow the EU, very recently, on May 2021, recognised this shift of MSP towards “soft sustainability” rather than “hard sustainability” or ecosystem approach, by approving the Communication “On a new approach for a sustainable blue economy in the EU Transforming the EU's Blue Economy for a Sustainable Future” (EC, 2021b).

It became clear that as land-based economies slow down and the depletion of terrestrial resources increases, this results in a greater interest in the economic opportunities contained within and under the sea (OECD, 2016). But, while maritime trade and commerce, fishing, coastal tourism, and oil and gas

exploitation are “business as usual,” new technologies introduced competing uses for maritime spaces, being offshore wind farms, off shore aquaculture, deep sea mining or blue biotechnology, revealing a shift to a more centralised and planned economy, which allocates “ownership” and establishes mechanisms and governance systems designed to protect national assets and private investments, introducing what some authors claim to be a “neoliberalisation” of the oceans and the privatisation of common property spaces (Voyer et al., 2018).

The evolution we are facing today is most probably the third wave of the “Blue Growth Revolution” and the most significant the world has faced in the last six centuries, and probably the one that will have a deeper impact in Ocean Governance at a regional, national, and global scale. Science and technology triggered a new ocean economy and economy pushing governments to reshape the governance of maritime space, from legal to institutional and governmental frameworks. Moreover, it will once again raise the issue of equity and, as Bennett et al. (2021) argue, blue growth, as it is, can produce numerous environmental and social injustices and achieving “blue justice” may require a substantial change to ocean governance, which may also entail a substantial change in who is involved in the decision-making processes and in the way that decisions are made. Moreover, this move towards a neoliberal blue economy will no doubt have an impact on geopolitical disputes, shining a light on political instability between neighbours at the regional as well as at a global level, which is clearly demonstrated with tension around the Chinese initiative of the “Belt and Road Initiative”,²⁰ also known as the “New Silk Route.” This initiative motivates heated debate in the European Union, the other world power in maritime transport and trade, with very strong opposition from several member states and still the subject of tense discussion (Karlis and Polemis, 2019); again it seems a struggle to control global maritime commerce as in the XVI century. Caswell et al. (2020) elaborate how historical perspectives may provide lessons for blue growth agendas, as critical appraisal and prioritisation of the aims of blue growth will be essential for decision-making, and trade-offs among goals and user groups will be inevitable if blue growth is to be achieved - but the attainment of all goals simultaneously may not be possible. On the other hand, collaboration between different sectors and neighbouring regions will greatly improve the chances for a global and equitable success.

The balance between hard blue growth and an ecosystem approach will be decisive for the ecological sustainability of the oceans and the future model of ocean governance - surely this will be a keystone issue within the UN Decade of Ocean Science for Sustainable Development. As in Vasco da Gama and Colombo's time, we know where we are departing from, we may know what we want to reach, but we are still looking for the route.

²⁰In 2013, the Chinese government launched the “New Silk Road” initiative (in fact called the Belt and Road Initiative). The concept and proposal are based on gigantic investments, especially in the areas of transport and infrastructure, both terrestrial (Belt), connecting Europe, the Middle East, Asia and Africa, and maritime (Road), passing through the Pacific Ocean, crossing the Indian Ocean and reaching the Mediterranean Sea.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

FUNDING

This publication was financed by the Portuguese national funds through FCT – Fundação IP under project reference UIDB/04292/2020 and the European Union's Horizon 2020 Research and Innovation Programme under grant agreement

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- N810139: Project Portugal Twinning for Innovation and Excellence in Marine Science and Earth Observation – PORTWIMS. Also, part of the research was supported by the Project Planning in a liquid world with tropical stakes – PADDLE, under grant agreement no. 734271 of the European Union's Horizon 2020 Research and Innovation Programme.

ACKNOWLEDGMENTS

I thank the Portuguese National Council for the Environment and Sustainable Development which ensured several international institutional interactions. I thank Thomas Goulding for the English revision and Ana Carvalho for the final editing. At last, but not the least, a deep thanks to all the colleagues at the Paddle Project and to several of my Master's students who collaborated with me in this 5-years research, helping to collect information.

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