Marine Spatial Planning in Regional Ocean Areas: Trends and Lessons Learned

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Introduction[*]

Marine spatial planning (MSP) was developed as a place-based, integrated marine governance approach to address sectoral and fragmented management issues and has seen significant evolution over the past two decades.[1] MSP has rapidly become the most commonly endorsed management regime for sustainable development in the marine environment, with initiatives being implemented across multiple regions of the globe. Despite its broad and growing acceptance and use, there are several key challenges that remain, both conceptual and practical, that are negatively impacting the realization

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[*] This article has been edited by the first and last authors, who also wrote the introductory sections, the discussion, conclusion, and the section on MSP in Kenya, Mauritius and Seychelles. The other authors wrote the remaining regional sections, as indicated by their affiliation (excluding Joseph Onwona Ansong, who is affiliated with Ulster University in the UK, but wrote on MSP in Western Africa, and Eric Wade, who is affiliated with Oregon State University in the United States, but wrote on MSP in Belize); they contributed equally, and are listed in the order of the nations as they appear in the article. The authors thank Professor Mandy Lombard at Nelson Mandela University and Dr. Bernadette Snow at Strathclyde University for their helpful comments and guidance on the section on MSP in South Africa.

1 V.I. Chalastani et al., "A bibliometric assessment of progress in marine spatial planning," *Marine Policy* 127 (2021): 104329.

of MSP's potential.[2] These include institutional shortcomings,[3] the exclusion of stakeholders,[4] a failure to account for the human and social dimensions of marine regions,[5] the marginalization of different types of knowledge,[6] and the growing need to adapt to global environmental change.[7] Although studies have examined the emergence of MSP in different geographical and institutional contexts, there is a lack of comparative analysis of how initiatives are progressing and if the foundational aims of MSP are being achieved. There is a need to analyze the degree to which MSP initiatives are responding to the environmental challenges that they have been set up to tackle and, as marine plans are setting out long-term visions for marine management, to understand if current initiatives are fit for purpose. This article responds to these concerns and reviews the evolution of MSP within 12 regional ocean areas. We utilize the term regional ocean areas to illustrate the geographical spread of MSP, with examinations conducted of the approach to MSP that specific nations within each of the 12 chosen clusters have followed. By critically assessing how MSP is progressing, it is possible to shed light on the opportunities and challenges that are facing current initiatives. This can help to reveal learning lessons that can inform future MSP systems and guide initiatives along more sustainable pathways.

This article is not intended to be a thorough empirical analysis of the progress of MSP. Rather, it aims to provide an overview of how MSP is evolving within diverse national and regional contexts and illustrate the major trends that are emerging globally. By analyzing the legislative arrangements, objectives, implementation and evaluation processes, and the initial impact of MSP across 12 regional areas, this article presents an overview of how MSP is developing. The next section provides an overview of MSP's evolution over the last two decades. This is followed by a series of national reviews of MSP implementation in 12 regional ocean areas. These reviews showcase how MSP has

2   C. Frazão Santos et al., "Major challenges in developing marine spatial planning," *Marine Policy* 132 (2018): 103248.

3   E. Olsen et al., "Integration at the round table: Marine spatial planning in multi-stakeholder settings," *PloS One* 9, no. 10 (2014): e109964.

4   W. Flannery, N. Healy and M. Luna, "Exclusion and non-participation in marine spatial planning," *Marine Policy* 88 (2018): 32–40.

5   T. Dalton, R. Thompson and D. Jin, "Mapping human dimensions in marine spatial planning and management: An example from Narragansett Bay, Rhode Island," *Marine Policy* 34, no. 2 (2010): 309–319.

6   A. Said and B. Trouillet, "Bringing 'deep knowledge' of fisheries into marine spatial planning," *Maritime Studies* 19, no. 3 (2020): 347–357.

7   C. Frazão Santos et al., "Integrating climate change in ocean planning," *Nature Sustainability* 3, no. 7 (2020): 505–516.

quickly spread across the globe, as well as revealing the major factors that are supporting and inhibiting its fulfilment as an integrative means of marine management. This is followed by a discussion section that evaluates some of the key findings extracted from the reviews, reflecting upon the issues that are shaping the conceptualization and operationalization of MSP initiatives in different regional contexts, before questioning what this means for future MSP practice and research. Factors revealed as being challenges common to MSP initiatives include the rationale for MSP implementation, the need for legislative backing, the material consequences of MSP and the need for evaluative feedback loops, the use and production of knowledge, and a lack of innovation. This article concludes by briefly outlining a range of recommendations on how MSP can evolve in more sustainable and inclusive manners over the next decade and as it spreads to other nations and regions.

The Evolution of Marine Spatial Planning

MSP has come to prominence as a new and integrative approach that can contribute to the sustainable economic, environmental and social governance of the seas and ocean.[8] Many of MSP's principles have been built on terrestrial spatial planning practices, instigating a spatial turn in marine governance and regulation.[9] MSP is operationalized through the implementation of plans that guide marine management, as well as the utilization of specific instruments and regulations, including setting out preferred geographical patterns of sea uses within particular spaces. In accordance with the principles of neutrality and accessibility, MSP is required to operate with the optimum arrangement of interests in mind. Engaging with a broad range of actors and perceptions can help to prevent conflicts between marine sectors and activities, ensure that marine resources are used in the most efficient manner, and protect valuable or threatened marine ecosystems.[10] As an operational framework, MSP is a multi-faceted approach that can simultaneously support the conservation of a nation's marine environment, enable the realization of its economic potential,

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8   S. Jay et al., "International progress in marine spatial planning," *Ocean Yearbook* 27 (2013): 171–212.

9   P. Gazzola and V. Onyango, "Shared values for the marine environment: Developing a culture of practice for marine spatial planning," *Journal of Environmental Policy & Planning* 20, no. 4 (2018): 468–481.

10   N. Schaefer and V. Barale, "Maritime spatial planning: Opportunities and challenges in the framework of the EU integrated maritime policy," *Journal of Coastal Conservation* 15, no. 2 (2011): 237–245.

and facilitate more integrated patterns of sea use among actors.[11] The multi-faceted nature of MSP has resulted in it being championed by academics and practitioners as an advancement upon traditional marine management systems, which, until recently, were guided by *ad hoc* and sectoral approaches.[12]

MSP has a strong association with marine nature conservation and has been interpreted as an extension of the logic of creating marine protected areas (MPAs).[13] The zoning system implemented in Australia in the 1980s to facilitate the sustainable management of the Great Barrier Reef Marine Park (GBRMP) is commonly referenced as a pioneering example of MSP.[14] Further initiatives in North America, such as the National Marine Sanctuaries Program, were also strongly led by environmental concerns and represented initial movement toward an ecosystem-based management (EBM) approach for marine areas.[15] These successful examples encouraged the adoption of an ecosystem approach to MSP thinking, whereby management interventions are sensitive to ecological constraints,[16] leading the early MSP literature to closely align with EBM.[17] However, the uptake of MSP over the last two decades, especially in Europe, has been characterized by a broader range of objectives than mere conservation. Principally, these include the desire to maximize the economic opportunities presented by the sea via the better organization of maritime activities.[18] Realizing these opportunities involves the management of both traditional sea uses, including fishing and trade, as well as newer or emerging activities, such as aquaculture and marine renewable energy. MSP seeks to balance the competing objectives of marine activities through an integrative

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11 R. Pomeroy and F. Douvere, "The engagement of stakeholders in the marine spatial planning process," *Marine Policy* 32, no. 5 (2008): 816–822.

12 Jay et al., n. 8 above.

13 Pomeroy and Douvere, n. 11 above.

14 J.C. Day, "Zoning: Lessons from the Great Barrier Reef marine park," *Ocean & Coastal Management* 45, no. 2–3 (2002): 139–156.

15 W. Flannery and M. Ó Cinnéide, "Stakeholder participation in marine spatial planning: Lessons from the Channel Islands National Marine Sanctuary," *Society & Natural Resources* 25, no. 8 (2012): 727–742.

16 C. Kelly, G. Ellis and W. Flannery, "Conceptualising change in marine governance: Learning from transition management," *Marine Policy* 95 (2018): 24–35.

17 L. Crowder and E. Norse, "Essential ecological insights for marine ecosystem-based management and marine spatial planning," *Marine Policy* 32, no. 5 (2008): 772–778; C. Ehler and F. Douvere, "Marine spatial planning: A step-by-step approach toward ecosystem-based management," Intergovernmental Oceanographic Commission and Man and the Biosphere Programme, *IOC Manual and Guides* No. 53, ICAM Dossier No. 6 (Paris: UNESCO, 2009).

18 P.J.S. Jones, L.M. Lieberknecht and W. Qiu, "Marine spatial planning in reality: Introduction to case studies and discussion of findings," *Marine Policy* 71 (2016): 256–264.

approach to management, creating policy that cuts across sectors, borders and a diverse range of change drivers. Indeed, the European Union's (EU) Integrated Maritime Policy (IMP), created in 2007, was designed as a system for coordinating different policy goals in the maritime arena. The IMP positioned MSP as a fundamental tool for the sustainable development of the economic potential of the EU's marine and coastal regions.[19] In the United States (US), the Obama administration introduced the memorandum entitled *National Policy for the Oceans, Our Coasts, and the Great Lakes* in 2009. The memorandum established a unifying framework under a national policy that included a comprehensive EBM framework for the long-term conservation and use of marine resources in the United States, as well as creating an Interagency Ocean Policy Task Force that was to develop a recommended system for effective MSP.

By 2008, MSP was discussed as an idea "whose time has come." Although numerous attempts had been made to define both the scope and nature of MSP, relatively few had discussed how to put it into practice. A special issue in the journal *Marine Policy* in 2008,[20] as well as the publication of an associated UNESCO guidance document in 2009,[21] popularized and defined the concept of MSP more clearly. The UNESCO guidance document presented a "step-by-step approach" to demonstrate how MSP could be established and applied through a logical sequence of comprehensive guidelines that would enable desired goals and objectives for marine areas to be achieved.[22] Specific steps included establishing a planning authority, obtaining financial support, organizing pre-planning and stakeholder participation, as well as the need to monitor plan performance post-implementation. The promotion of MSP as a structured and logical approach to marine management has led to intergovernmental bodies, non-governmental organizations (NGOs), stakeholder organizations, and marine scientists and managers championing the approach. Such cross-cutting interest has contributed to MSP's rapid growth across the globe, with coastal nations being encouraged to embrace MSP as a means of both managing current maritime conflict and preparing for future complexities.[23]

The global spread of MSP has led to the emergence of different administrative patterns. For example, some regional sea organizations, such as the Baltic Marine Environment Protection Commission (also known as HELCOM),

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19   Schaefer and Barale, n. 10 above.

20   F. Douvere and C. Ehler, "Introduction," *Marine Policy* ("The Role of Marine Spatial Planning in Implementing Ecosystem-based, Sea Use Management," Special Eds., F. Douvere and C. Ehler) 32 (2008): 759–761.

21   Ehler and Douvere, n. 17 above.

22   Id.

23   P. Drankier, "Embedding maritime spatial planning in national legal frameworks," *Journal of Environmental Policy & Planning* 14, no. 1 (2012): 7–27.

have advocated for a collaborative approach to MSP between members. Furthermore, encouragement by the EU for all relevant member States to establish MSP systems has been interpreted as an attempt to develop greater cooperation between nations that share regional ocean areas.[24] Emphasis has also been increasingly placed on the need to link MSP with integrated coastal zone management (ICZM) initiatives and existing terrestrial planning arrangements.[25] In addition to these wider management strategies, it is also clear that MSP uptake is being driven by specific spatial needs, such as to permit the development of offshore wind energy schemes and to protect highly valued habitats from harm.

Reviews have revealed how MSP, in reality, is often focused on achieving specific sectoral objectives, related to nationally important strategic priorities, and, in some contexts, can be driven by blue growth objectives.[26] Subsequent studies have revealed how MSP is conditioned, and constrained, to represent contrasting values and sensitivities in both biophysical and socio-political dimensions.[27] There remains limited evidence, however, of how MSP can successfully balance such demands. Initial literature and policy on MSP fail to account for these challenges and demonstrate a limited consideration of the regional factors that can hinder a nation's development of MSP. Indeed, early MSP studies tend to be promotional in nature, with little evidence of questioning the assumed benefits of MSP or of considerations being given to the complexities of putting it into practice.[28] Until recently, more critical contributions were restricted to analytically assessing procedural aspects, such as developing improved methods of data management, stakeholder engagement or evaluation of plans. Although valuable, this work operates largely within its own terms and does not engage with wider, socially-oriented conceptual frameworks.[29] In response to these limitations, calls for deeper engagement with social processes, such as power, justice, distributional impacts, and the potential for progressive forms of MSP have been made.[30] The elusive ideal of MSP facilitating both conservation and development has been interpreted as a

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24   Ehler and Douvere, n. 17 above.

25   Jay et al., n. 8 above.

26   Jones et al., n. 18 above.

27   W. Flannery et al., "A critical turn in marine spatial planning," *Maritime Studies* 19 (2020): 223–228.

28   Id.

29   S. Kidd and G. Ellis, "From the land to sea and back again? Using terrestrial planning to understand the process of marine spatial planning," *Journal of Environmental Policy & Planning* 14, no. 1 (2012): 49–66.

30   W. Flannery, J. Clarke and B. McAteer, "Politics and power in marine spatial planning," in *Maritime Spatial Planning*, eds., J. Zaucha and K. Gee (London: Palgrave Macmillan, 2019), pp. 201–217.

discrepancy between theory and practice, with a growing body of literature illustrating the need for crucial choices to be made by legislative bodies to ensure that MSP does not become an "illusion behind which other agendas lie."[31]

The MSP academic and policy literatures have been dominated by Global North institutions, often underpinned by assumptions that MSP can be exported globally through uniform guidelines and approaches, with little attention paid to local contexts. Although the spread of MSP has been accelerated by the existence of these principles and standards, it is evident that a wide variety of practical MSP approaches are beginning to develop. Variations in the operationalization of MSP are reflective of diverse political contexts, objectives and planning traditions. As MSP continues to develop, we must seek to learn from this diverse experience, to evaluate if MSP will achieve its potential, and to develop approaches that are attuned to social and regional differences.

Regional Profiles

Twelve regional ocean areas that have one or more nations currently active in developing MSP have been chosen for this review. This is not a comprehensive list; many other regions and nations are also actively pursuing MSP or are carrying out related processes. It is important to note that the nations selected vary considerably in the extent to which they are carrying out MSP. In these profiles, the focus is on a number of key factors that illustrate the differences in approach, implementation and future direction of MSP initiatives. The following topics are covered in each review: (i) an overview of MSP progress; (ii) the planning process that is supported; (iii) the problématique that MSP initiatives seek to respond to; (iv) the vision and objectives of MSP initiatives; (v) the implementation process; and (vi) the evaluative review of MSP initiatives.

The sections below have been authored by MSP experts, as indicated in the list of authors, who have a good knowledge of national MSP initiatives in their respective regional ocean areas. Although contributors were provided with a degree of liberty to adopt their own approach in describing MSP, a comparative assessment of the evolution of MSP in different nations has been made possible by utilizing the aforementioned six topics. Where contributors were able to provide an overview of more than one country, these have been grouped to provide better coverage within the limits of the article. Each regional profile

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31   B. Trouillet, "Reinventing marine spatial planning: A critical review of initiatives worldwide," *Journal of Environmental Policy & Planning* 22, no. 4 (2020): 441–459.

will be presented in the following paragraphs, where one or more national MSP initiatives are assessed. Our journey begins in Oceania and the Western Pacific, with Australia, often cited as the founder of MSP, and Taiwan, and follows, approximately, the sun across the globe. This brings us to the Indian Ocean for a collective profile of how MSP is developing in Kenya, Mauritius, Seychelles and onto South Africa. We then move to the European sea areas, starting in the Black Sea with Romania, onto Sweden, in the Baltic Sea, and across to the North Sea to review the Netherlands, Belgium and the United Kingdom (UK). We then move to the Atlantic for a collective profile on Ghana, Côte d'Ivoire and Senegal and another on Portugal, France and Spain, and onto the United States and Canada. The profiles conclude in the Caribbean Sea with an account of MSP in Belize.

Oceania and the Western Pacific
Australia
Australia has led the way in originating MSP. Australia established one of the world's first MPAs in Sydney's Royal National Park in 1879,[32] and created the GBRMP, cited globally as a pioneering example of MSP and zoning.[33] However, Australia has unique and complicated jurisdictional challenges as a result of the federal political system that divides responsibility and access between the federal government and individual states.[34] Jurisdictional divisions are supported by legislative arrangements, such as the Offshore Constitutional Settlement (OCS), and create policy overlap and inconsistencies, making integrated management of the marine space difficult.[35] The fragmented jurisdictional landscape of Australia's marine space has often resulted in difficulty implementing nationwide MSP. Looking at the GBRMP as an example, although MSP has achieved significant progress in minimizing initial problems such as conflicting human activities, conservation of biodiversity, and maintaining a balance between economic and environmental interests,[36] the success of this system has recently been challenged by the effects of climate change on

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32   R. Kenchington, "The evolution of marine conservation and marine protected areas in Australia," in *Big, Bold and Blue: Lessons from Australia's Marine Protected Areas*, eds., J. Fitzsimons and G. Wescott (Clayton: CSIRO Publishing, 2016), pp. 29–42.

33   J. Vince, "Oceans governance and marine spatial planning in Australia," *Australian Journal of Maritime & Ocean Affairs* 6, no. 1 (2014): 5–17.

34   M. Yin and E.J. Techera, "A critical analysis of marine protected area legislation across state and territory jurisdictions in Australia," *Marine Policy* 118 (2020): 104019.

35   Id.

36   R. Kenchington and J. Day, "Zoning, a fundamental cornerstone of effective Marine Spatial Planning: Lessons learnt from the Great Barrier Reef, Australia," *Journal of Coastal Conservation* 15, no. 2 (2011): 271–278.

the reef and land-sourced pollution, addressing both of which is outside the GBRMP authorities' remit due to the continuation of the fragmentation issues described above.

A state-level example of note is the planning and development of the New South Wales (NSW) Marine Estate. The NSW Marine Estate Management Authority (MEMA) was created to manage the estate and to implement the objectives of the *Marine Estate Management Act, 2014*.[37] Visions, objectives and decision-making principles were established by MEMA in 2013 and published in the NSW Marine Estate Management Strategy.[38] Principles focused on the requirement for risk-based assessment of threats, assessment of the social, cultural, and economic benefits and a focus on community engagement, values, well-being and outcome for current and future generations.[39] Subsequently, extensive community surveys and increased stakeholder engagement were commissioned by MEMA. NSW marine management has, historically, been dominated by ecological and economic approaches implemented in parallel, through multiple government agencies with overlapping jurisdictions. These approaches have become increasingly challenging due to expanding coastal populations and the resulting resource pressures.[40] While efforts to localize management can help to focus attention on local concerns, separating responsibility and creating boundaries in a shifting system, such as the marine space, creates new challenges.

The principles and processes that MEMA used to underpin early management advice and recommendations of the marine estate have become the initiatives and actions necessary to deliver improved, evidence-based management.[41] This importantly includes a five-step decision-making process in the Marine Estate Management Strategy. Achievements include the development of a cross-agency governance structure, coastal design guidelines, a fisheries harvest strategy draft, a seafood industry program and a community well-being framework, increased protected coastal wetlands and riverbanks, monitoring estuary ecosystem health and early signs of climate change effects, an audit on dredging, training provided to fishers and Indigenous Peoples, and

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37 *Marine Estate Management Act*, 2014, No. 72, available online: <https://legislation.nsw.gov.au>.
38 MEMA, "NSW Marine Estate Management Strategy 2018–2028," NSW Government (Ed.) (2018).
39 K. Brooks et al., "Transforming coastal and marine management: Deliberative democracy and integrated management in New South Wales, Australia," *Marine Policy* (2020): p.104053.
40 Id.
41 Brooks et al., n. 39 above.

education programs around pollution and wildlife management. In terms of monitoring, five-year "health checks" will review the progress of implementation, respond to research and monitoring outputs and consider new evidence and emerging threats that need a management response. While challenges remain, for example, embedding Indigenous rights and cultural shifts, public consultation processes and engagement with the strategy show that legitimacy of the decision-making process has increased, and MSP progress is being made at the state level within Australia.

Taiwan

Although Taiwan is a maritime nation, neither the coastal zone nor sea areas have undergone a planning process. The region experiences high competition from different maritime sectors, including fisheries, shipping, commerce, and recreational development. However, Taiwan's national government has, traditionally, tended to support sector-specific management, but has failed to embed future-thinking policies and, until recently, has placed marine management issues under the scope of territorial planning acts.[42] In an attempt to accommodate for the heightened range of pressures affecting the region's marine environment, as well as establishing a more integrated management framework, scholars have advocated for MSP to be legislatively introduced throughout the country as an active and sustainable method for sea use management.[43] Recent years have seen progress in this objective becoming reality, with the Ocean Affairs Council (OAC) established in 2018 to govern Taiwan's developing MSP system. Prior to the establishment of the OAC, the Ministry of the Interior (MoI) was responsible for all the coastal administration and regulatory implementations. As of 2018, responsibility is shared between the two bodies. The MoI manages applications for the use of sea and coastal areas, while the OAC is accountable for the implementation and management of sea and coastal areas.

While not yet legislatively implemented, the *Sea Area Management Act* for Taiwan outlines how MSP will strengthen the region's sea area management, establish a dynamic MSP system, strengthen marine monitoring, safeguard national marine rights and interests, and enhance maritime safety and sea order. The OAC, which is formulating the Act, is in the process of consulting with the nation's municipal and county governments. The objectives of the Act

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42   Y.C. Shih, "Taiwan's progress towards becoming an ocean country," *Marine Policy* 111 (2020): 103725.

43   W.H. Liu et al., "The role of local government in marine spatial planning and management in Taiwan," *Marine Policy* 35, no. 2 (2011): 105–115.

will be based on the demands of national security, ocean development, marine resource extraction, and the empirical utilization of sea areas. The national *Sea Area Management Act* will be shaped by the principles and priorities of MSP, as well as a range of provisions for the maintenance and management of marine space zoning. The Act is scheduled to be reviewed every five years.

In addition to the persistent challenges of competition of management responsibilities and sea use areas, concerns have also arisen regarding the lack of consolidation or coordination mechanisms at the executive level. Taiwan also operates without a dedicated agency to consolidate the basic database for the science of marine resources, leading to limitations on the range of knowledge that can be used to inform management decision-making.[44] Although monitoring of the marine ecological environment is conducted through fractional environmental impact assessment (EIA) surveys, there remains a lack of any comprehensive analysis of the current marine ecological situation. It is crucial that Taiwan's MSP system factors these limitations into its development and actively seeks to rectify them. There are also several political challenges that MSP will be forced to consider. These include contradictions between the definition and identification of "government" in international (Article 4 of the *Ocean Basic Act*) and domestic policy, leading to confusion on what Taiwanese bodies can and cannot legislatively enact. Furthermore, as exemplified during the offshore wind farm review process, disputes and concerns over ministerial communication and policy coordination are persistent stumbling blocks to marine management in Taiwan.[45] In order for the use of the region's waters develop sustainably, these significant challenges must be considered as MSP develops in Taiwan. The previous decade has illustrated promising advancements in the region's management of its marine environment. Although challenges persist, there is a sound foundation for the consideration of a fully developed MSP system for Taiwan that, ideally, can manage the conflicts of different sea uses and the environment in a sustainable manner.

Indian Ocean
Kenya, Mauritius and Seychelles
MSP in the Western Indian Ocean has seen significant progress throughout the last decade, with several nations in the process of producing plans or

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44   Shih, n. 42 above.

45   W.Y. Chiau, "The development of offshore wind farms in Taiwan: A marine policy perspective," *Journal of National Development Studies* 18, no. 2 (2019): 55–124.

preparing for implementation.[46] In Kenya, MSP has been interpreted as a process of facilitating the sustainable management of the marine environment, as well as coastal and offshore fishery resources, through an EBM approach. Currently, a draft MSP roadmap is being prepared. This will include plans to implement MSP projects in pilot areas throughout Kenya and will formulate recommendations for MSP integration. As a means of strengthening its economic diversification, Mauritius has begun to advance MSP in key maritime sectors, such as port infrastructure, shipping, tourism, fisheries, and marine renewable energy. Meanwhile, the Seychelles has used MSP as a practical and participatory way of planning the sustainable use of its exclusive economic zone (EEZ), which is among the top 25 largest in the world.[47] Generally, the growth of MSP in the western region of the Indian Ocean has been guided by an overarching vision of developing strong partnerships between governments, civil society, and the private sector, enabling a prosperous future for the region.

In Kenya, a multi-sectoral Interagency Working Group has been constituted under the State Department for Fisheries, Aquaculture and the Blue Economy to guide the development of MSP. Although the implementation of a marine plan for Kenya is yet to be realized, pre-planning is underway.[48] Some of the key drivers for MSP in Kenya include developing the blue economy with proposed investments planned in shipping, aquaculture, tourism, fishing, and marine resource management.[49] Plans for an expansion of port activities, including new ports in Lamu and Shimoni, are also driving factors. In Mauritius, an MSP Coordinating Committee was set up and has led to the identification of key biodiversity areas in the region. The Department for Continental Shelf, Maritime Zones Administration and Exploration has been granted national authority for MSP. Key drivers include the need to establish a comprehensive system of multi-use marine planning for transparent, sustainable, and evidence-based decision-making, as well as intentions to set up an Ocean Observatory

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46 UN Environment, "Marine Spatial Planning: Status, Best Practices, and Challenges in the Western Indian Ocean Region," *Blogpost* (April 17, 2019), available online: <https://www.unep.org/nairobiconvention/news/blogpost/marine-spatial-planning-status-best-practices-and-challenges-western-indian-ocean>.

47 "MSP Road Map: Seychelles," *IOC-UNESCO*, available online: <https://www.mspglobal2030.org/msp-roadmap/msp-around-the-world/africa/seychelles/>.

48 "MSP Road Map: Kenya," *IOC-UNESCO*, available online: <https://www.mspglobal2030.org/msp-roadmap/msp-around-the-world/africa/kenya/>.

49 P. Thoya et al., "Trawling effort distribution and influence of vessel monitoring system (VMS) in Malindi-Ungwana Bay: Implications for resource management and marine spatial planning in Kenya," *Marine Policy* 109 (2019): 103677.

E-platform to centralize data.[50] As current coastal management in Mauritius is narrowed to only include areas within one km from the high tide watermark, MSP is intended to harmonize the scope of coastal management with the whole EEZ. MSP in the Seychelles began in 2014 and is a process focused on planning for the sustainable and long-term use of the region's ocean. MSP is a government-led process in the Seychelles, with planning and facilitation led by the Nature Conservancy. MSP has been framed as an integrated, multi-sector approach to address climate change adaptation, marine biodiversity protection and support the blue economy. The process has a robust stakeholder engagement framework to develop a comprehensive marine plan with stakeholder input. With pre-planning and extensive consultation processes completed, the marine plan is in the process of being approved.

The countries of the Western Indian Ocean have developed and adopted MSP approaches for different purposes. The levels of implementation vary across countries, with more advanced processes having been implemented in Seychelles. Implementation in Kenya and Mauritius remains at an earlier stage. As coastal and marine sectors have historically been managed individually, resulting in a lack of coordination in decision-making, it is important to apply a harmonized approach for the future development of the Western Indian Ocean region. At an MSP Roadmap seminar, a regional approach to MSP was proposed as having the potential to add significant benefits to the region by applying a broader perspective to the challenges associated with marine governance, as well as providing an opportunity for joint learning, improved cooperation, and capacity building.[51] A regional approach is also promoted as a means of providing a coordinated structure for knowledge and data sharing throughout the region.

South Africa

MSP in South Africa had its inception in the National Environmental Management of the Oceans (NEMO) white paper in 2014. The NEMO intended to bring in subsidiary legislation underneath it, such as MSP and MPAs, thereby consolidating and coordinating founding principles and legislation. In the same year, however, Operation Phakisa (Sesotho for "hurry up") was launched by the then Department of Environmental Affairs to accelerate the region's

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50   "MSP Road Map: Mauritius," *IOC-UNESCO*, available online: <https://www.mspglobal2030.org/msp-roadmap/msp-around-the-world/africa/mauritius/>.

51   "Building capacity of institutions and stakeholders involved in the MSP process for the Kenyan EEZ and nearshore waters," *MSP Roadmap Seminar* (October 22, 2020), available online: <https://www.mspglobal2030.org/wp-content/uploads/2020/11/MSProadmap_Presentation_Kenya_20201021-2.pdf>.

National Development Plan. This initiative aims to unlock the economic potential of South Africa's ocean, to increase awareness of the societal benefits of the ocean, to protect cultural heritage, and collaborate with civil society to enable effective ocean governance. MSP became a key component of this framework and, in 2017, the National MSP Framework and the draft MSP Act were published to provide a structure for marine planning in South Africa's waters. As of 2021, the lead authority for MSP in South Africa is the Department of Forestry, Fisheries and Environment. In terms of sub-regional initiatives, the Benguela Current Commission initiated a regional collaborative project between Angola, South Africa, and Namibia. The aim is to safeguard natural capital by identifying ecologically and biologically significant areas (EBSAs) and integrating these as conservation and protection areas in a region-wide marine plan.

South Africa's marine area is divided into four biogeographic marine areas to serve as planning units: the East Coast, the South-East Coast, the West Coast and the Prince Edward Islands. In accordance with international experience, an MSP Working Group was created and is working on a two to four-year time-frame to develop the first area plan for the Southern Marine Area. Overarching MSP objectives are intended to be achieved over a 20-year period. The National Data and Information Report for MSP will provide both an evidence base to design marine area plans and to collate the spatial layers that are needed to design the marine plan. Challenges to collecting necessary data have included sourcing data, data usage agreements and the establishment of a data management-hosting platform. Current data gaps include both biophysical and socio-economic data. The Algoa Bay Project, the pilot site for the first marine spatial plan in South Africa, is attempting to address these gaps by completing small-scale oceanographic, geographic, and socioeconomic data surveys for the case study area.[52]

South Africa's MSP Framework acknowledges that consistent and early participation of stakeholders is important. However, a lack of government capacity in this regard has led to the exclusion of academics with valuable expertise in MSP processes, as well as marginalizing small-scale fisheries communities and other stakeholders.[53] Upskilling of officials to facilitate inclusive participatory processes, the inclusion of researchers as well as capacity-building of affected

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52   R. Dorrington et al., "Working together for our oceans: A marine spatial plan for Algoa Bay, South Africa," *South African Journal of Science* 114, no. 3–4 (2018): 1–6.

53   J. Sunde, *Marine Protected Areas and Small-scale Fisheries in South Africa: Promoting Governance, Participation, Equity and Benefit Sharing* (Chennai, India: International Collective in Support of Fishworkers, 2014).

stakeholders is, therefore, a crucial requirement going forward. Additionally, as MSP has only recently come into force in South Africa, the mitigation of inter-sectoral conflicts through trade-offs is only in the initial stages. Fragmented and unstable governance systems, characterized by a lack of integration, coordination, and transparency, are some of the key challenges impacting the development of MSP in the region.[54]

Evaluating how MSP in South Africa can be encouraged to continuously evolve sustainably, scholars have reflected on the supporting role of civil society by recommending that both local and national initiatives should be based on extensive stakeholder engagement and should follow an ecosystem-based approach.[55] Innovative mechanisms are required to ensure that stakeholders can effectively participate in engagement processes. Further issues to consider going forward include the need to prepare for the conflicts that may arise between South Africa's MSP Act and the environmental authorizations provided under specific environmental management acts.[56] South Africa has made significant progress in its development of MSP and, if initial challenges are to be responded to, the region can continue to develop along a sustainable and inclusive pathway to marine management.

European Seas
Romania

MSP development in Romania started in 2015, in accordance with the EU Directive 2014/89/EU, and will be developed in accordance with standardized MSP methodology. The national plan is currently in a preparation development phase and is expected to be finalized during 2021. The Ministry of Development, Public Works and Administration represents the institution responsible for the preparation, coordination and implementation of MSP. As Romania has a centralized governance system, this law gives full power to the Romanian government to prepare the National Marine Plan.[57] An MSP Committee was established in May 2017. The Committee aims to elaborate the marine spatial

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54   S. Taljaard, L. van Niekerk and S.P. Weerts, "The legal landscape governing South Africa's coastal marine environment: Helping with the 'horrendogram'," *Ocean and Coastal Management* 178 (2019): 104801.

55   J.R. Reed et al., *Marine Spatial Planning Workshop Report and Outcomes: The Role of Civil Society in Supporting Marine Spatial Planning* (Workshop Report, Cape Town, South Africa, 6–7 March 2017).

56   D. Metuge, "The impact of marine spatial planning legislation on environmental authorisation, permit and licence requirements in Algoa Bay," *Journal of Ocean Governance in Africa* (2021): 79–121.

57   N. Vaidianu and M. Ristea, "Marine spatial planning in Romania: State of the art and evidence from stakeholders," *Ocean & Coastal Management* 166 (2018): 52–61.

plan and to monitor its implementation. Within the first pilot MSP project, MARSPLAN-BS,[58] a draft MSP plan of the cross-border area of Romania and Bulgaria was elaborated. Both Bulgaria and Romania have limited experience in applying MSP and, prior to the adoption of EU Directive 2014/89/EU, there were only project-based efforts and results. The key obstacles for MSP in the Black Sea are mainly linked to difficult administrative frameworks for MSP, undetermined EEZs, a lack of supportive legislation and weak stakeholder engagement. Another barrier relates to diverse political contexts and the increasing political instability in some parts of the Black Sea, for example, in Ukraine.

The Maritime Spatial Planning Committee, an inter-ministerial body that is without legal power, functions under the coordination of the Prime Minister, who also holds the presidency. The MSP Committee facilitates public consultation with stakeholders and public authorities to ensure transparency in public administration and decision-making. It is stipulated that the Plan will be developed with the involvement of stakeholders and will be reviewed at least once every ten years. Since 2016, several public participation events, such as workshops, focus groups and meetings with stakeholders, have been held. These efforts aim to raise awareness and map conflicts and barriers in implementation. Currently, Romanian stakeholders have a relatively poor understanding of European, national, and regional sea planning regulations. A total of 22 institutions are engaged with the MSP Committee, with each ministry involved carrying out the duty to appoint one delegate who will bring knowledge and expertise to create the plan. Some institutions have mentioned that, as of 2021, they have yet to receive any official paper requesting specific documents or any point of view. Additionally, bottlenecks were encountered due to institutional changes.

The future for MSP in Romania looks promising due to the high level of academic expertise involved in the national committee, but resolutions taken by this committee could fail without political will.[59] To ensure proper implementation of the MSP process in Romania, evaluative reports suggest the need for an interactive MSP platform that shows the spatial interactions between different land-based and marine activities; more evidence on the relationship between the value of ecosystem services, and economic and social welfare; heightened visibility of initiative outcomes; better integration of future local, national and cross-border development plans; and an altered MSP Committee

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58   "Marine Spatial Planning—Black Sea," *MARSPLAN Project*, available online: <http://www.marsplan.ro>.

59   Vaidianu and M. Ristea, n. 57 above.

that functions as a task force able to coordinate and give direction for future sustainable development plans in accordance with the blue growth economy.[60]

####### Sweden

The idea of developing a Swedish MSP was first voiced in a government commission report in 2008. Although the report was not specifically aimed at MSP, it identified a need for a national framework for MSP as part of the management of the marine environment.[61] This first iteration of MSP was expressed as providing a system for the protection of the marine environment and the planning of coastal and territorial waters. It was to be performed by regional agencies on a county level. However, this proposal met with opposition from many consultative bodies. As a result, a new government commission was appointed, with the instruction to propose a system for a national MSP that would cover marine areas starting one nautical mile (M) seaward of the baseline, until the EEZ limit. It was established that this approach would be guided by an ecosystem approach.[62] There are three plan areas in Swedish marine waters, with the purpose of the nation's MSP approach being to contribute to its long-term sustainable development. The lead authority for the development of the three plans, which are currently waiting to be adopted by the central government, is the Swedish Agency for Marine and Water Management (SwAM).

The planning process has included extensive consultation with stakeholders and different sectors. The process started with consultations with regional and sectoral agencies to identify the current status of resource utilization, demands, and anticipated developments.[63] In 2015, SwAM, together with municipalities and regional agencies, performed thematic analyses to identify synergies and conflicts among the different interests. This analysis also provided recommendations for the coming planning process. In December 2016, the first draft plans and strategic environmental assessments (SEAs) were presented, with these drafts sent out for dialogue with stakeholders and agencies during the first half of 2017. The first proposals for marine plans were presented at the beginning of 2018 and were sent out for consultation later

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60   MARSPLAN, "Sub-activity 1.1.1 Synthesis report on maritime uses," available online: <http://www.marsplan.ro/en/results/marsplan-bs-ii-support-the-work-of-national-competent-authorities.html>.

61   Government of Sweden, SOU 2008:48, "En utvecklad havsmiljöförvaltning" (2008), pp. 147–148.

62   Miljödepartementet, "Havsplanering i svenska vatten," Kommittédirektiv 2009:109 (2009).

63   Swedish Agency for Marine and Water Management, "Marine spatial planning: Current status 2014" (2015).

that year. A report was published on the results from the referrals and the new amended plans were published in 2019 and were subsequently presented to the government. In addition to the consultation processes, SwAM developed a decision-support tool called "Symphony" that calculates cumulative impacts from human activities in the marine environment. Through these calculations, the potential effects of various planning options can be assessed.[64]

The main purpose of Sweden's proposed plans is to clarify how different marine areas can be used in order to increase predictability for actors in these areas. As in most countries establishing MSP, the fragmented nature of organizing marine activities is the main reason for creating a system for MSP in Sweden. The cumulative impact assessments performed by SwAM show that many of the pressures on the marine environment are located in coastal waters. This indicates that an important role is to be played by local municipalities if the aims of the MSP are to be met. MSP remains a relatively new concept in the Swedish administrative system, and few evaluations have been made. One study that has been completed focused on the planning system and how the division of planning competence between municipalities and the central government has affected planning priorities in coastal waters in relation to the territorial sea.[65] The findings of this study indicate that there is a gap between the two planning levels and that municipalities show little interest in the national MSP. In addition, municipal decision-making is driven by a highly localized rationale. Based on these findings, the study argues that there is a clear need for increased coordination between the two levels of planning to avoid fragmentation in governance. This would also provide a clearer link to land-sea interactions that are not currently being sufficiently addressed in the national MSP system.

Low Countries (Belgium and the Netherlands)

Belgium and the Netherlands, with landlocked Luxembourg, form the "Low Countries by the Sea."[66] While the Dutch terrestrial area is only 1.3 times larger than its Belgian counterpart, the sizes of their EEZs differ significantly. The Belgian part of the North Sea is about 0.5 percent of the North Sea (3,454 km²) and the Dutch part (Dutch continental shelf) makes up 10 percent (about

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64   Swedish Agency for Marine and Water Management, "Symphony—integrerat planerings-stöd för statlig havsplanering utifrån en ekosystemansats" (2018), available online: <https://www.msp-platform.eu/practices/symphony-tool-ecosystem-based-marine-spatial-planning>.

65   A. Westholm, "Scaling Marine and Water Management" (LL.D. Diss, University of Gothenburg, 2021), p. 190.

66   J. Romein and A. Romein-Verschoor, *The Low Countries by the Sea: A History of the Dutch People* (Utrecht: Uitgeversmaatschappij W. De Haan, 1940).

57,000 km²). Both countries started their MSP processes in the early 2000s, following commitments for the designation of MPAs and rising spatial demands for offshore wind developments.[67] In Belgium, the Minister for the North Sea is responsible for the coordination of MSP, in consultation with public services and stakeholders. MSP became fully binding from a legal perspective in 2014.[68] In the Netherlands, the Ministry of Infrastructure and Water Management has overall responsibility for MSP, collaborating with other ministries and departments overseeing sectoral developments, nature conservation, and security and safety affairs. The 2009 National Water Plan became the nation's first MSP plan.

Belgium has one of the most intensely used maritime zones in the world, meaning that the major challenge facing MSP is linked to the need to balance conflicting uses at sea. These include the designation of nature conservation areas, offshore wind energy, dredging, shipping, fishing, and tourism. Problems are also related to Belgium's multilevel governance structure, wherein authorities are divided among local, regional, and federal levels, and competencies are fragmented over several Flemish and federal government institutions.[69] A major shortcoming of the Belgian MSP is that fisheries are only partly included in the MSP, due to the competence of the Flemish government. In line with Belgium, the Netherlands faces the challenge of balancing multiple claims in a crowded sea. In its second MSP plan, the Dutch government indicated three transitions (food, energy, and nature) needed to achieve a healthy and sustainably used sea. Stakeholder consultation and participation are considered vital for realizing an overall, well-balanced transition. A major implementation challenge for both countries is cross-border and transboundary cooperation.[70] The Preparatory Action on MSP in the North Sea Project (MASPNOSE) addressed collaboration between Belgium and the Netherlands through the case of the Thornton Bank.[71] Dutch and Belgian civil servants explored the opportunities and constraints for transboundary cooperation, resulting in the identification of common objectives and potential interferences. However, stakeholders

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67   Jay et al., n. 8 above.

68   Olsen et al., n. 3 above.

69   Id.

70   F.M. Platjouw, "Marine spatial planning in the North Sea: Are national policies and legal structures compatible enough? The case of Norway and the Netherlands," *International Journal of Marine and Coastal Law* 33, no. 1 (2018): 34–78.

71   M. Pastoors et al., "Preparatory Action on Maritime Spatial Planning in the North Sea— MASPNOSE Final Report," Department of International Public Law (2012): 1–40.

from environmental NGOs were not invited, as governmental actors feared that their presence would prevent them from freely expressing ideas.[72]

A recently published comparative study shows a significant positive impact of the MSP implementation in Belgium.[73] MSP has led to an increase in the production value of marine sectors, with €929 million accumulated between 2014 and 2016. Sectors that benefited most were offshore wind energy, gravel and sand extraction, and aquatic project construction, although tourism activities have suffered negative effects. In the Netherlands, MSP continues to produce beneficial outcomes for the sustainable management of the region's marine environment. Key learning lessons that have informed MSP evolution in the Netherlands have stemmed from research on balancing sectoral demands, the use of future scenario studies and reports on learning from within the MSP process. Particular examples of evolution include the government's realization of the need to provide more clarity about offshore wind energy developments[74] and to instigate a movement from a reactive to a proactive MSP approach.[75]

United Kingdom

MSP in the UK can be traced back to 2002, with a commitment to legislation coming in 2004. Following nearly a decade of advocacy from environmental NGOs and international organizations, the *Marine and Coastal Access Act, 2009*[76] (hereafter the Marine Act 2009) created the statutory framework for a system of MSP. The Marine Act 2009 marked the establishment of MSP's role in the administration of marine activities in the English and Welsh inshore and offshore areas, and the Scottish and Northern Irish offshore areas. Owing to the system of devolution within the UK, MSP for the inshore regions of Scotland and Northern Ireland was established through two further statutes: the *Marine (Scotland) Act*, 2010, and *Marine (Northern Ireland) Act*, 2013, with the Scottish government also making provision for a National Marine Plan (SNMP) within their Act. The legislative framework for MSP in the UK is, therefore, hierarchical, with the development and implementation of marine plans subservient to

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72   J.P. van Tatenhove, "Transboundary marine spatial planning: A reflexive marine governance experiment?," *Journal of Environmental Policy and Planning* 19, no. 6 (2017): 783–794.

73   J.C. Surís-Regueiro et al., "An applied framework to estimate the direct economic impact of marine spatial planning," *Marine Policy* 127 (2021): 104443.

74   X. Keijser, H. Toonen and J. van Tatenhove, "A 'learning paradox' in maritime spatial planning," *Maritime Studies* 19, no. 3 (2020): 333–346.

75   Platjouw, n. 70 above.

76   *Marine and Coastal Access Act*, 2009, c. 23, available online: <https://www.legislation.gov.uk>.

the Marine Act 2009. The Marine Acts place a duty on the relevant administrations to, among other things, develop marine plans.

One example of a noteworthy regional MSP initiative is the Scottish Sustainable Marine Environment Initiative. The initiative was established as a means of developing and examining alternative approaches to improve the sustainable management of Scotland's marine environment through the establishment of pilot projects. By complementing current marine management initiatives in the UK, it aimed to gain an understanding of the nature, value, and management needs of Scotland's marine environment, with an interest in considering how new management initiatives and future legislation could support a truly sustainable framework.[77] Four pilot areas were involved: the Firth of Clyde, Shetland Isles, the Sound of Mull, and the Berwickshire coast. The Clyde Pilot, as one example, set the objective of delivering more integrated and sustainable management of the marine and coastal areas of the Firth of Clyde by way of effective stakeholder-regulator partnerships and improved decision support mechanisms. Learning from the Clyde Pilot, reviews suggest that the initiative illustrates how wide arrays of data, knowledge and skills are required to successfully implement MSP, as well as demonstrating how effective MSP takes time to be established, particularly if its capacity for tackling difficult problems is to be realized.[78]

England's MSP is stated as being centered on matters of evidence and stakeholder engagement.[79] However, analysis of England's MSP suggests that it has been developed in a post-political manner, with little space for debate. A technocratic managerial approach, wherein the process of gathering evidence is used to create an "illusion of inclusion," has been adopted to support a narrow range of pre-determined objectives.[80] In Scotland, there is recognition that the inclusion of a broad range of actors might benefit the legitimacy and acceptance of MSP. However, powerful stakeholders have shaped the vision and process of MSP, with current institutional arrangements creating equivalent

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77   R. Shucksmith et al., "Regional marine spatial planning: The data collection and mapping process," *Marine Policy* 50 (2014): 1–9.

78   W. Flannery and M. Ó Cinnéide, "A roadmap for marine spatial planning: A critical examination of the European Commission's guiding principles based on their application in the Clyde MSP Pilot Project," *Marine Policy* 36, no. 1 (2012): 265–271.

79   Department for Environment, Farming and Rural Affairs (DEFRA), "East Inshore and East Offshore Marine Plans" (London: DEFRA, 2014).

80   J. Clarke and W. Flannery, "The post-political nature of marine spatial planning and modalities for its re-politicisation," *Journal of Environmental Policy & Planning* 22, no. 2 (2019): 170–183.

hierarchical spaces of emerging engagement.[81] More generally, several political assumptions and ideologies have been seen to guide the development of MSP in the UK. It is widely accepted in the academic literature that MSP has, primarily, been driven by neoliberal ambitions to centralize and streamline licensing, and, in so doing, accommodate an expansion of the offshore renewable energy sector.[82] A highly systematic approach to implementing plan policies, combined with fragmented decision-making across devolved administrations, and the hierarchical institutional arrangements, is evidence of the problematic implementation of MSP across the UK.

The Marine Acts make provision for reviews of MSP across the UK. Plan authorities must, on a three-yearly basis, review and report on the effects of the policies, effectiveness of the policies in securing the plan objectives, and progress made toward securing those objectives. The first review of MSP in England concluded that while there had been a contextual change, namely the UK's decision to leave the EU, this did not affect the relevance of the plan, and thus no amendment was needed. For Scotland, there have also been two reviews of the SNMP. While policies were seen to create change, barriers to implementation including lack of awareness, resource constraints, and emerging issues (e.g., Brexit) necessitated consideration but not an amendment of plans. Together with ongoing issues with planning partnerships and fragmentation of the marine and terrestrial planning systems, academic reviews point to the need for MSP in the UK to be re-politicized to facilitate progressive, integrated and ecosystem-based decision-making.[83]

The Atlantic

Ghana, Côte d'Ivoire and Senegal

This regional profile encompasses reviews of three West African nations currently developing MSP, namely Ghana, Côte d'Ivoire and Senegal. Although other nations have shown movement toward the implementation of MSP in West Africa, including Benin, its adoption is still under discussion and there is no specific legislation to support its development. In Ghana, the legal framework for MSP is enforced through the *Land Use and Spatial Planning Act*, 2016. The Act mandates the Land Use and Spatial Planning Authority as the authority responsible for MSP. It also defines Ghana's marine space as part of

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81   G. Smith and S. Jentoft, "Marine spatial planning in Scotland: Levelling the playing field?," *Marine Policy* 84 (2017): 33–41.

82   G. Scarff, C. Fitzsimmons and T. Gray, "The new mode of marine planning in the UK: Aspirations and challenges," *Marine Policy* 51 (2015): 96–102; Clarke and Flannery, n. 80 above.

83   Clarke and Flannery, n. 80 above.

the spatial planning framework under a three-tier system including national, regional and district-level plans. MSP in Côte d'Ivoire has been initiated to support the development, protection, and integrated management of the Ivorian coast. The National MSP Steering Committee was established to evaluate the institutional framework for MSP and to make recommendations for new legislation. In Senegal, the adoption of MSP is still under discussion and there is no specific legislation to support its implementation. However, some government departments and authorities in Senegal recognize the increased need for MSP. Stakeholders with interest and remit in MSP were identified through a survey and interviews during the PADDLE project.[84]

The MSP process is still in its infancy in Ghana, with initial efforts focusing on the preplanning and analysis stages. This has involved reviewing existing legislation and policies to make recommendations for legislative changes for MSP. The National MSP Working Group was established with key stakeholders to gather baseline data and identify data gaps. However, limited funding for data collection has meant that the initial progress has mainly been informed by previous projects. Limited in-country technical capacities, especially regarding the use of decision support tools, have also slowed the process of MSP. The next stages of MSP in Ghana will include the preparation of future alternative scenarios and attempts to realize the ambitious target of achieving 100 percent sustainable ocean management by 2025. In Côte d'Ivoire, MSP efforts also remain in the preplanning phase. Data on the existing and future socio-economic activities have been collected from the various departments and administrative officials. This was followed by training workshops on the use of SeaSketch as a collaborative planning tool. The next stage of MSP in Côte d'Ivoire involves developing zoning and management plans. In Senegal, the visions and objectives for MSP are yet to be defined. However, political action and restructuring of government departments in 2019, by expanding the mandate of the Department of Fisheries into the Department for Fisheries and Maritime Economy, displays the blue economy ambition and goals of the government. The need to address sectoral conflicts between oil and gas exploitation, fishing and marine protected areas is another objective.

It is expected that the outcomes of MSP in Ghana will address sectoral conflicts between oil, gas, and fishing activities, mitigate the loss of critical marine and coastal habitat, address the dwindling fish stocks, and tackle pollution from upstream industrial and agricultural activities. Managing flooding and

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84   M. Le Tixerant et al., "Cartographic Atlas of Marine Environmental Law in West Africa. Methodology and use for spatial planning," *Cybergeo: European Journal of Geography* (1278–3366) (Open Edition), 2020–01, no. 958.

coastal vulnerability are also expected to be key outcomes. The main driver for MSP in Côte d'Ivoire is the need to address the fragmented marine sectoral process. Specifically, fragmented sectoral processes have led to several coastal impacts, including coastal erosion at the mouth of the Comoé River. Moreover, the MSP process seeks to enhance coexistence between artisanal fishers and the tourism industry. Transboundary advantages and cooperation with Ghana have been noted as one of the issues to explore under MSP. MSP in Côte d'Ivoire also seeks to safeguard biological diversity and to identify EBSAs.

Reviews and evaluations of Ghana's existing MSP framework show that the process is dominated by State actors with weak intersectoral integration. Although sectoral management follows a decentralized structure, planning and decision-making are led by individual sector-focused ministries, which lack the capacity to develop integrated planning and management. MSP processes must seek to understand and address colonial legacies, wherein traditional authorities (chiefs) had their own system of governance and control over resources in their jurisdiction. MSP in Ghana is yet to address these issues, which is preventing long-term acceptance from traditional authorities and coastal communities both at the national, regional, and local levels. Although there have yet to be comprehensive evaluations of the development of MSP in Côte d'Ivoire, the monitoring of plans is expected to happen every two years, while plan revision will occur every five years. The lack of political direction and a legal framework for MSP in Senegal, added to the absence of an MSP authority, make implementation a challenge. Studies suggest that advancing MSP implementation in Senegal will require restructuring and streamlining of the governance framework through integrated policy and legislation.[85]

Portugal, Spain and France

This profile includes a review of the uptake of MSP in three western European nations: Portugal, Spain and France. The need for MSP in Portugal was first established in 2008, in line with the National Ocean Strategy 2006–2016 and early European and international guidelines on MSP. Between 2009 and 2012 the first marine spatial plan was developed and published as a "soft-law."[86] The Portuguese government then started developing new specific regulations for MSP, which included a "framework law" laying the foundations for national

85   J. Guerreiro et al., "Governance prospects for maritime spatial planning in the tropical Atlantic compared to EU case studies," *Marine Policy* 123 (2021): 104294.

86   C. Frazão Santos et al., "How sustainable is sustainable marine spatial planning? Part II—The Portuguese experience," *Marine Policy* 49 (2014): 48–58.

MSP and the complementary legislation that implemented the law.[87] These apply to the entire Portuguese EEZ, plus its extended continental shelf beyond 200 M. In Spain, the EU Directive on MSP (2014) has been transposed into Spanish legislation, with five marine districts (four on the mainland and one in the Canary Islands) approved by Royal Decree. Although rapid progress is being made in regard to the development of MSP in Spain, the process remains at an earlier stage than that of Portugal. As with Spain, the EU Directive on MSP (2014) has been transposed into French legislation. MSP builds on the French National Strategy for the Sea and Coast and, during its transposition into law, modified the French Code of Environment. The Ministry of the Sea, created in the summer of 2020, is now the authority that coordinates the marine planning system in France. It is important to note that the discussion of MSP in France presented here is focused on mainland France.

Two types of MSP instruments are embedded within Portuguese legislation, with both of them legally binding on public and private entities. These are the Situation Plan (PSOEM), which identifies the current and future distribution of maritime activities, and Allocation Plans, focused on allocating areas to new uses.[88] The planning process is led by the Portuguese Directorate-General for Natural Resources, Safety and Maritime Services. A geoportal is available with spatial data on the existing and potential uses included in the PSOEM, while the Portuguese Directorate General for Maritime Policy is responsible for promoting the ongoing monitoring of both types of national MSP instruments, in particular regarding achieved socio-economic effects and identified environmental impacts. The implementation of MSP in Spain is carried out under the authority of the Ministry for the Ecological Transition, which ensures coordination between the different ministries involved, as well as with the autonomous communities. Within each of Spain's marine districts, stakeholder involvement is achieved by involving stakeholders in workshops to review the proposals made by the administrations, and by consulting the public.[89] A data portal exists for Spanish MSP, yet there is limited information on the use of knowledge in the general MSP process. To date, Spanish marine plans are still under construction and should be approved in 2021. In France, the four marine planning documents consist of two parts, each containing two chapters.

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87   V. Becker-Weinberg, "Portugal's legal regime on marine spatial planning and management of the national maritime space," *Marine Policy* 61 (2015): 46–53.

88   C. Frazão Santos et al., "Challenges in implementing sustainable marine spatial planning: The new Portuguese legal framework case," *Marine Policy* 61 (2015): 196–206.

89   P. Quero García, J. García Sanabria and J.A. Chica Ruiz, "Marine renewable energy and maritime spatial planning in Spain: Main challenges and recommendations," *Marine Policy* 127 (2021): 104444.

Formally adopted in the autumn of 2019, the first part is the strategic side with (i) an initial assessment and (ii) strategic objectives. The second part, due in 2021, is the operational side. This contains (iii) the monitoring mechanism and (iv) the action plan. Initially, the French authorities rejected an overly spatial form of planning, preferring a more strategic one, although this mentality is beginning to change.[90] A data portal operates in the French MSP system, added to a portal with "vocations" for each MSP area. Despite these, there is a general lack of data to assess social or non-market issues that are of relevance for MSP.

Preliminary analysis of the Portuguese MSP initiative highlighted that environmental concerns seem to come second to economic goals, with an integrated use approach to MSP being followed (based on weak sustainability concepts).[91] This strong focus on maximizing the development of the ocean economy may pose further challenges to ensuring sustainable ocean planning in practice. The need for bottom-up participatory processes, effective performance monitoring and evaluation, and the closing of planning and policy cycles have been identified as key challenges to future MSP initiatives in Portugal.[92] As Spain remains at an earlier stage of its MSP process, there are no formal planning documents available to assess and it is difficult to analyze how the process is evolving. Although there is no information on formal evaluation processes, there are academic publications reviewing the pre-planning situation.[93] In France, the analysis of the content of four marine plans shows that, in general, the environmental and offshore wind objectives are by far the most detailed and precise. In a difficult post-Brexit context, and in regard to the ambitious objectives of the multi-annual energy plan, the case of fisheries still seems to be in suspension, struggling to find (or to keep) its place. Recently, the national authority expressed the need for "simplification" for the next round of MSP. The overall picture in Portugal, Spain and France shows significant progression of MSP in this region of the world, yet assessments reveal the need for more bottom-up participatory processes and a greater array of knowledge bases to inform decision-making. Importantly, calls for greater

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90   B. Trouillet et al., "Planning the sea: The French experience. Contribution to marine spatial planning perspectives," *Marine Policy* 35, no. 3 (2011): 324–334.

91   Frazão Santos et al., n. 88 above.

92   M.A. Ferreira et al., "Gold rush or Pandora's box? Toward a transparent and measured approach to marine spatial planning in Portugal," *International Journal of Marine and Coastal Law* 30 (2015): 418–444.

93   J.L. Suárez de Vivero and J.C. Rodríguez Mateos, "The Spanish approach to marine spatial planning: Marine Strategy Framework Directive vs. EU Integrated Maritime Policy," *Marine Policy* 36, no. 1 (2012): 18–27.

clarity and the simplification of MSP processes suggest that structural changes may be required.

The United States and Canada

This regional profile assesses MSP in two North American nations, the United States and Canada. MSP in the United States has progressed since the first comprehensive ocean plan was created in 1969. In 2009, the Obama Administration established the Interagency Ocean Policy Task Force for MSP. This resulted in the executive order, Stewardship of the Ocean, Our Coasts, and the Great Lakes under a new National Ocean Council that included heads of many federal agencies. The order planned for nine regional marine spatial plans to guide decision-making that would cover the whole US EEZ. However, in June 2018 the Trump Administration created a new federal ocean policy and committee that revoked the National Ocean Policy (NOP) and implementation plan created under the Obama Administration. Unlike the previous executive order, this does not focus on stewardship, biological diversity, and environmental health. Once considered a leader for holistically managing coastal and marine areas, Canada was the first country to adopt a comprehensive foundation for integrated coastal and oceans management (ICOM), including MSP initiatives, with the promulgation of the *Oceans Act* (1996).[94] Since then, efforts towards integrated management have waxed and waned with changing priorities as the development and implementation of plans are not considered to be statutory. Therefore, objectives relating to integrated management of marine regions through sustainable development and EBM, have not yet been fulfilled widely. In recent years, Canada has revisited and updated commitments to ICOM through the recognition of MSP and stated a desire to embed an EBM approach.

In the United States, each marine spatial plan has a different process. The Northeast Ocean Plan, as one example, is the regional plan released by the Northeast Regional Planning Body, established by NOP. The process included formal meetings and outreach, stakeholder forums, state-based public meetings and advisory groups, subject-specific projects, participatory GIS mapping, and working groups. Major sectors in the plan were cultural resources, transportation, national security, fishing, recreation, and energy and infrastructure. A similar regional approach in Canada was guided previously by large ocean management areas and now planning areas as outlined by the Department of Fisheries and Oceans. Currently, five planning areas have been identified as priority areas for MSP moving forwards, including the Scotian Shelf-Bay of Fundy,

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94   *Oceans Act* (S.C. 1996, c. 31), available online: <https://laws-lois.justice.gc.ca/eng/acts/o-2.4/>.

the Estuary and Gulf of St. Lawrence, the Newfoundland-Labrador Shelves, the Pacific North Coast, and the Pacific South Coast. Each planning area is progressing towards MSP slightly differently as each administrative region has its own set of objectives, unique contexts, histories, actor interests and capacities. The way in which ICOM planning processes will occur at the regional level for MSP in Canada will vary due to the unique jurisdictional contexts and actor group interests of each region.

Core planning problems for the United States include fragmented governance and stakeholder conflict, as well as changing priorities for future planning. The MSP process allows stakeholders to come together and discuss priorities and concerns on a state or regional level. However, the regional and state plans have not always connected due to the disruption of the regional planning process, and because authorities are split between national, state, and departmental agencies.[95] The struggle for authority between federal and state priorities can be compared to the EU context. In terms of process disruption, it remains unclear how MSP can continue through political administrations at both state and federal/regional levels. In Canada, the objectives of ensuring integrated management of marine regions by supporting sustainable development and by managing with an EBM approach have not yet been fulfilled.[96] There also exists jurisdictional complexities between provinces, Indigenous organizations, and federal authorities, and there remains a need to better integrate the way in which multiple activities are managed to maintain ecological integrity.[97] For example, recent efforts in Canada have resulted in a patchwork of activities, fragmented and uncoordinated decision-making, and decision-making processes without consideration of broader impacts to the ecosystem and communities.[98]

In spite of differences in terminology and legislation, there is a distinct similarity in the approach of the United States and Canada to MSP. In both countries, MSP is implemented at the regional level and includes coastal and ocean waters out to the 200 M EEZ. In the Gulf of Maine in Eastern Canada, MSP

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95   H.V. Vizcarra and L. Bloomer, "Analysis of the regulation and deregulation of US ocean and fisheries policies" (2019), available online: <http://eelp.law.harvard.edu/wp-content/uploads/Oceans-paper-COMPLETE-WEB-VERSION.pdf>.

96   S. Jessen, "A review of Canada's implementation of the Oceans Act since 1997: From leader to follower?," *Coastal Management* 39, no. 1 (2011): 20–56.

97   L. Nowlan, "Brave new wave: Marine spatial planning and ocean regulation on Canada's Pacific," *Journal of Environmental Law and Practice* 29 (2016): 151.

98   A. Charles, "People, oceans and scale: Governance, livelihoods and climate change adaptation in marine social-ecological systems," *Current Opinion in Environmental Sustainability* 4, no. 3 (2012): 351–357.

will be implemented by way of a Marine Spatial Plan for the Scotian Shelf-Bay of Fundy planning area and on the US side through the Northeast Regional Ocean Plan. In both countries, federal laws and statutes are used to coordinate decision-making with provinces, states, and Indigenous peoples. Multi-actor regional bodies have been established on both sides of the border to support the development of MSP. This includes the Northeast Regional Planning Body in the United States and the Regional Committee on Coastal and Oceans Management in Canada. To maintain the efficient development of MSP in the United States and Canada, a strong policy framework for both nations is recommended within the literature, with calls for opportunities for participation from local communities and diverse sectors to be included throughout the process. Critical governance challenges connected to a "business as usual" mentality have been revealed as hindering integrated management in both the United States and Canada, with the Bay of Fundy as one example.[99] To successfully achieve the potential of MSP in the region, commitment from government, engagement from NGOs, and stronger policy frameworks that can facilitate participation from local communities and diverse sectors throughout the MSP process are suggested as being crucial.[100]

Caribbean Sea

Belize

MSP in Belize began over two decades ago with the passage of the *Coastal Zone Management Act* in 1998. The Act was initially developed to address the increase in coastal population in the country, development primarily from tourism, and overfishing. The Act in its passage by Parliament established the Coastal Zone Management Authority and Institute and charged them with the enforcement of the Act. The Institute was further directed to operationalize the Act and to create a holistic approach to the management of the coast. This process to develop Belize's ICZM plan began in 2010, with a collaborative approach followed throughout. In Central America, Belize is currently one of the only countries that have developed a policy for its coastal zone. Further, Belize's policy is the most recent and comprehensive across the region.[101]

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99   S.L. Eger and S.C. Courtenay, "Integrated coastal and marine management: Insights from lived experiences in the Bay of Fundy, Atlantic Canada," *Ocean & Coastal Management* 204 (2021): 105457.

100 S.L. Eger et al., "Revisiting integrated coastal and marine management in Canada: Opportunities in the Bay of Fundy," *Frontiers in Marine Science* 8 (2021): 439.

101 V. Caviedes, P. Arenas-Granados and J.M. Barragán-Muñoz, "Regional public policy for integrated coastal zone management in Central America," *Ocean & Coastal Management* 186 (2020): 105114.

The objective of developing an ICZM plan for Belize was initially started in 1998, with the passage of the *Coastal Zone Management Act*. However, the timeline to the actual adoption of the plan took two decades. The process initially divided the country into three planning zones: the Northern, Central, and Southern Zones, along with Coastal Advisory Committees (CACs) for each of the regions. The CACs are made up of key stakeholders in each of the zones that help to guide the process in each region. The CACs are also responsible for the development of draft guidelines for each region and then carry out public consultations to revise the draft. The plan leverages both local and international collaborations in collecting data to inform the plan, with data being collected across physiographic, oceanographic, climatological, biological, infrastructural, geopolitical, economic, cultural, and social fields. Two key challenges arose during the data collection phase: the availability of credible data on the health of the coastal zone, and the competing interests that arose in the identification of priority areas by stakeholders.

The ICZM plan organized its objectives under three main themes: (1) an adaptive approach to marine and coastal issues that goes beyond the department and jurisdictional boundaries; (2) the development of a timeframe for the accomplishment of targets identified in the plan; and (3) the development of an approach for monitoring and evaluating the plan's progress. However, the degree to which these aims have been successfully realized remains uncertain. While the plan was endorsed in 2016, directed funding to its implementation has been limited. In addition, the implementation of the act is also being handled across many government departments and statutory bodies, with oversight by the Coastal Zone Management Authority and Institute. This enhances the difficulty of assessing the accomplishment of the objectives. The first formal review of the plan was to occur in 2020. However, the global pandemic coupled with the welcoming of a new administration delayed the review. Although Belize should be championed as one of the first Central American nations to begin a process of legislatively managing its coastal and marine waters, there is evidence of challenges and barriers arising. Actively responding to these will be crucial for the future sustainability of the region's marine environment.

Discussion

This article has presented an overview of the evolution of MSP in a number of regional ocean areas where it is being actively considered or practiced by coastal or marine nations as part of a multi-sectoral and spatially specific

approach to marine management. The 12 regional areas included in this review are significant in that they all reflect nations that are taking steps to introduce MSP, or to develop it further, at an official level and are drawing up spatial plans for all or part of their marine territories. The nations assessed in this review only reflect a portion of the world's seas and ocean. Nonetheless, the MSP initiatives described collectively illustrate that MSP is taking on a global dimension and is beginning to evolve within regional and national contexts. Although there is considerable consensus among proponents of MSP regarding its core objectives and the procedural shape that it might take, the above accounts demonstrate that there are differences in the way in which MSP is evolving. Indeed, the reviews illustrate how MSP processes are not evolving consistently and suggest that some systems are not fit for purpose. There are considerable differences in the extent of its adoption within regions, the legislative framework that supports its incorporation into wider systems of governance, the planning practices being developed, how knowledge is collated to inform decision-making, and how the initial problems that initiatives were set up to tackle are, or are not, being responded to. In general, the regional reviews highlight several key implications regarding the current evolution of MSP. By examining these findings, it is possible to consider how learning lessons can be shared and how more sustainable, inclusive, and responsive MSP systems can be created. The key implications have been identified.

First, there are diverging rationales for the implementation of MSP. In the majority of reviewed nations, MSP is outlined by the bodies charged with its implementation as an approach that can balance marine conservation and economic development goals. However, reviews suggest that, in reality, rationales for the use of MSP are shaped by regionally specific needs. For example, MSP in the UK is revealed as being driven by ambitions to centralize and streamline licensing processes, and, in so doing, accommodate an expansion of the offshore renewable energy sector. This is reflective of the wider literature on MSP, which suggests that the economic opportunities are proving to be more of a driver in some contexts than others.[102] This reinforces assertions that, in some regions, MSP has shifted from its early conservation-driven efforts toward more comprehensive planning for all marine uses and, in particular, objectives to maximize the regional potential of the blue economy. There are also indications that the rationales outlined by some regional areas can change over time. Once more reflecting on the UK, there is evidence to suggest that the initial objectives of MSP, to actively engage stakeholders with the development of local marine environments and to secure marine

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102   Jones et al., n. 18 above.

conservation, remain unfulfilled and, instead, ambitions that were not initially outlined in policy, regarding coastal development and offshore energy expansion, have been prioritized.[103]

Second, there is an evident requirement for legal backing for MSP to develop. All of the reviewed regions reveal the need for statutory approval to enable the initiation of MSP initiatives, either by way of aligning with existing legislation or establishing new acts or laws. Examples of new dedicated legislation can be seen in the European regions, which highlights the increasing importance that is being placed upon MSP in the region. This process of requiring legislative support contrasts with early conceptualizations of MSP, where a large number of voluntary, often research-driven, MSP exercises were established. In recent years, there appears to be growing recognition of the need for a statutory basis for the effective implementation of MSP. As can be seen in a multitude of regions, MSP can remain unfulfilled unless statutory approval is granted. This highlights the importance of engaging with statutory processes early in the development of MSP initiatives, an issue that often curtailed the evolution of ICZM. However, it is useful to also note the potential implications of engaging with statutory processes. The assessment of MSP in Scotland, particularly in relation to the Clyde Project, demonstrates how MSP requires time to be effectively realized, yet statutory processes often advocate for regulated time schedules and deadlines for progression. In Scotland, there is evidence of institutional arrangements creating hierarchical spaces of engagement and facilitating powerful stakeholders with the opportunity to shape the vision and process of MSP to align with their own interests and needs.

Third, there is a lack of evaluative assessments on the material consequences of MSP initiatives, in terms of physical improvement in environmental quality and better control of maritime activities and infrastructure. While some outcomes are beginning to emerge, especially in relation to marine conservation (e.g., through the designation of protected areas), a lack of consistent and wide-ranging formal evaluations means that a lot remains unknown about the impact of MSP initiatives. This is particularly the case for issues associated with conflict management and the involvement of human dimensions within MSP. Additionally, there is less clarity regarding the extent to which the wider goals of MSP, such as the integration of economic activities and the marine environment, are being achieved. This is an issue that has been increasingly examined in the literature in recent years, with the majority of scholars suggesting that MSP efforts are failing to actively contribute to the wider goals of integrated and sustainable marine management. Although the reviewed regions in this article

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103   Clarke and Flannery, n. 80 above.

reveal cases of how MSP initiatives often focus on achieving specific sectoral objectives, supporting the continued use of top-down participatory processes and prioritizing blue growth objectives, there are limited formal reviews of the specific targets that initiatives have and have not achieved. More robust evaluations of MSP processes and their impacts would help to rectify this issue and, at the same time, could reveal specific recommendations on how initiatives could improve. Continued research efforts that critically assess the successes and challenges of initiatives will also support this aim.

Fourth, there are limitations to the types of knowledge being used to inform MSP decision-making. The overuse and over-empowerment of technical knowledge in policy- and decision-making is increasingly seen to be creating significant inequalities among marine stakeholders. This is specifically impacting smaller actors, communities and local or small-scale sectors. In the realm of fishing, MSP processes are seen to streamline bioeconomic metrics and fall short of including or empowering the local or cultural knowledge that comprise fisheries.[104] The mixture of coastal stakeholders that seek to inform decision-making inevitably raises issues of power relations and disputes about whose knowledge counts as most valid. In Taiwan, there is no dedicated agency to consolidate the database for the science of marine resources, leading to limitations on the range of knowledge that can be used to influence the management decisions of MSP initiatives. Similar issues are encountered in Europe. Although data portals exist for Spanish and French MSP, there is a general lack of data to assess social or non-market issues that are relevant for MSP in each nation. Research suggests that new approaches to knowledge incorporation and exchange in MSP must come to fruition. This could involve a critical change of direction for MSP and calls for a reflexive approach to data collection to be utilized, whereby MSP is encouraged to question the foundational aspects of knowledge production.[105]

Fifth, there is a lack of innovation within MSP practice, with only fleeting examples of how alternative or novel approaches are being utilized to tackle emerging challenges. In Sweden, the implementation of the Symphony decision-support tool, which calculates the cumulative impacts of human activities in the marine environment, represents an innovative means of assessing the potential impact of various planning options. The Symphony tool enables MSP practitioners in Sweden to plan with an ecosystem approach in mind and to consider how specific planning approaches may avoid high cumulative

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104   Said and Trouillet, n. 6 above.
105   Id.

environmental impacts in specific marine areas. The information generated by the Symphony method is then included in EIAs and used to guide MSP decision-making. This review has revealed few other examples of innovation in MSP practice, and there is an evident need to explore how new approaches, such as the Symphony tool, can be created to compare different planning alternatives, to establish more effective means of communicating with stakeholders and to support the creation of more diverse knowledge bases. Many of the core ideas that MSP has been framed around have existed for close to three decades, meaning that innovation and the creation of new ideas are vital should the emerging socio-ecological challenges facing MSP, noted throughout this article, be efficiently responded to. MSP initiatives should be supportive of innovative approaches that may facilitate more active participation processes, such as marine community science,[106] and more comprehensive evaluation frameworks that can efficiently instill learning lessons within initiatives.

Sixth, the impact of power and politics is becoming increasingly apparent within MSP initiatives. The findings presented in this article highlight how some MSP initiatives, which should be deeply political processes due to their involvement of a wide array of stakeholders, have been "depoliticized" through the adoption of post-political planning processes.[107] Post-political processes refer to situations in which debate and dissent are increasingly sanitized or co-opted through consensual procedures. For instance, an analysis of England's MSP process suggests that it has been developed in a post-political manner, with little space for debate. A technocratic managerial approach, wherein the process of gathering evidence is used to create an "illusion of inclusion," has been adopted to support a narrow range of pre-determined objectives. To become capable of formulating solutions for MSP going forward, it is imperative for research to re-conceptualize the role of politics and power within MSP processes, move beyond asocial and apolitical framings and seek to develop alternative ways through which the potential of MSP can be realized. MSP has made strong progress in implementing collaborative and sustainable marine management across the globe in recent decades. It is imperative that this initial success is not disrupted or derailed by the interests of powerful actors.

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106   B. McAteer, W. Flannery and B. Murtagh, "Linking the motivations and outcomes of volunteers to understand participation in marine community science," *Marine Policy* 148 (2021): 104375.

107   Clarke and Flannery, n. 80 above.

Conclusion

These issues, emerging from a brief overview of the current spread and uptake of MSP, hint at the current evolution of MSP. While the rapid growth of MSP continues and its spread begins to reach new marine territories and regional areas, there is an increasing, and seemingly ever-expanding, range of challenges that must be responded to. There are evident concerns emerging about the capacity of MSP to support truly integrative and sustainable management, added to a lack of evidence to demonstrate how initiatives are rectifying problems regarding stakeholder exclusion and blue growth prioritization. The reviews also suggest a lack of consolidation or coordination at the executive level within many regions, in addition to concerns regarding the use and production of knowledge in MSP systems. There is also little evidence to suggest that learning is occurring within MSP or that expert and academic recommendations are being taken on board. The Netherlands represents one of the only regions where learning lessons, stemming from research on the balancing of sectoral demands and the use of future scenario studies, have been used to inform MSP evolution. More generally, there are evident disparities between the conceptualization and operationalization of MSP that remain unresolved.

MSP is, undoubtedly, a flexible process that can evolve further and return to its initial objectives, yet this can only be achieved if those charged with the implementation of initiatives respond to recommendations and actively seek to change the current direction of travel. There is a need for research to continue examining the reality of MSP and to comparatively assess the relative drivers, approaches, techniques, politics and impacts of different MSP systems. To support these objectives, reinforcing dialogue between science and policy is a crucial requirement. It is also crucial that the experiences of the regions profiled here are critically assessed over the coming years, so that good practice may be shared and momentum built for the adoption of new, meaningful commitments going forward. MSP offers great potential for the integrated management of marine environments, with clear benefits being realized throughout a range of ocean regions. Although persistent and emerging challenges are causing concern, initial efforts to develop MSP over the last two decades must not go to waste.