1. Governing the ocean for a sustainable future: *The Elgar Companion to Ocean Governance and the Sustainable Development Goals*

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I. THE RISING TIDE OF GLOBAL OCEAN GOVERNANCE

Over the past decade, the ocean has continuously moved to the forefront of the sustainability discourse – as a victim of unsustainable practices and, specifically, the so-called triple planetary crisis (climate change, biodiversity loss, and pollution); as an opportunity for (economic) development; as part of the solution to many of the world's problems; and as a symbol for connection in a divided world. Once treated as a vast and under-regulated space, the ocean is now understood as inseparable from a sustainable future. Ten years into the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs) (United Nations [UN], 2015), and in the immediate aftermath of the third UN Conference to Support the Implementation of Sustainable Development Goal 14 'Life Below Water' in 2025 (also termed the 2025 UN Ocean Conference, or UNOC 3), *The Elgar Companion to Ocean Governance and the Sustainable Development Goals* arrives at a momentous time. The *Companion* traces the progress, tensions, and architecture of the ever-evolving governance of our ocean under emerging risks and uses, and thereby takes stock of a decade of global efforts and challenges to transform people and the planet for a more sustainable future of the ocean.

Since 2015, the 2030 Agenda and its 17 SDGs form a comprehensive and universal global "plan of action for people, planet and prosperity" that pledges to leave no one behind (United Nations, 2015). Building on the more narrowly focused Millennium Development Goals, the 2030 Agenda and SDGs articulate a higher level of ambition for the post-2015 development agenda by expanding the number of goals from eight to 17 and delivering an integrated and indivisible framework that addresses all three pillars of sustainability: the social, economic, and environmental pillars (Neumann, Ott & Kenchington, 2017).

Unlike the Millennium Development Goals, which included only a single goal dedicated to environmental issues, the 2030 Agenda integrates environmental matters across multiple goals and explicitly dedicates one of its goals – SDG 14 – to ocean issues to "Conserve and sustainably use the oceans, seas and marine resources for sustainable development". This political milestone was shaped by momentum from the Rio+20 outcome document *The Future We Want*, which emphasises the critical role of "oceans, seas and coastal areas" for sustainable development (United Nations, 2012). Building on this mandate, Pacific island countries successfully led a diplomatic campaign advocating for a stand-alone ocean goal (Powers, 2014; Quirk & Hanich, 2016), which was seconded by strong support from States, civil society organisations, and academia for a dedicated ocean goal (International Institute for Sustainable Development Reporting Services, 2014; Loewe & Rippin, 2015; Powers, 2014; Visbeck et al., 2014a; Visbeck et al., 2014b).

While SDG 14, also known under the slogan 'Life Below Water', marks a significant step towards recognising the ocean, or rather the human–ocean system, as an individual issue, it cannot be pursued in isolation. The 2030 Agenda's 17 SDGs with their associated targets – in total, 169 targets were formulated to specify the goals – are designed as an integrated system, with numerous interlinkages and interactions that can generate both synergies and trade-offs through sometimes complex and systemic ways (Anderson et al., 2021; Griggs et al., 2017; Le Blanc, 2015; Scharlemann et al., 2020). This is particularly true for SDG 14, an integral part of the 2030 Agenda and deeply linked to most, if not all, other SDGs. As a result, advancing ocean sustainability demands comprehensive, coherent, and inclusive approaches for policy- and decision-making, developing strategies, and taking action (Le Blanc, Freire & Vierros, 2017; Linner et al., 2023; Nash et al., 2020; Nilsson et al., 2018; Schmidt et al., 2017; Singh et al., 2018; Singh et al., 2021).

SDG 14 itself addresses a wide range of specific issue areas critical to ocean sustainability, including pollution, climate change, marine protection and conservation, fishing and other resource extraction, economic benefits, ocean knowledge, technology and capacities, and international law (see Table 1.1). Yet these issue areas are deeply interwoven with other goals, and achieving 'ocean sustainability' is therefore, in fact, a matter of attaining not only SDG 14, but the 2030 Agenda as a whole. For instance, efforts to reduce marine pollution (Target 14.1) are linked to SDG 12 on responsible consumption, and ocean–climate interactions cut across SDG 13 (Schmidt et al., 2017; Singh et al., 2018; UN Office of Legal Affairs, 2021). As this *Companion* illustrates, ocean sustainability is not encapsulated in a single goal but is embedded throughout the 2030 Agenda (see Figure 1.1 for illustration). Recognising these interconnections is crucial to avoid conflicting developments in policy- and decision-making, and to support transformative pathways for a sustainable ocean future.

Since their adoption, the 2030 Agenda and SDGs, and specifically SDG 14, have spurred action from global to local towards more sustainable ocean use and conservation. However, progress on the targets formulated under SDG 14, including the so-called means of implementation (14.a–c), remains mixed, with some targets having already missed their timelines, while others show encouraging momentum (see, for example, Andriamahefazafy et al., 2022; Gjerde & Vierros, 2021; Lothian & Haas, 2024; Nash et al., 2020; UN Department of Economic and Social Affairs, 2025; and this *Companion*). The outcome of efforts over the past decade to achieve the 2030 Agenda for the ocean, as contained in this *Companion*, can be witnessed in a number of significant advances in global ocean policy and governance. Notably, many of the targets set out under the Kunming-Montreal Global Biodiversity Framework (GBF) established in 2022 under the Convention on Biological Diversity (Convention on Biological Diversity [CBD] Decision 15/4, 2022) are highly relevant for SDG 14, including Target 3, which mandates the effective conservation and management of 30 per cent of the planet by 2030 (see also chapters 3 and 12). Other GBF targets also complement SDG 14, including Target 1 on marine spatial planning, Target 2 on ecosystem restoration, Target 5 on sustainable fisheries, Target 7 on pollution, and Target 8 on climate change and ocean acidification. In fact, the GBF text explicitly recognises the mutual supportiveness between the framework and the SDGs (Convention on Biological Diversity, 2022, Annex, para. 3).

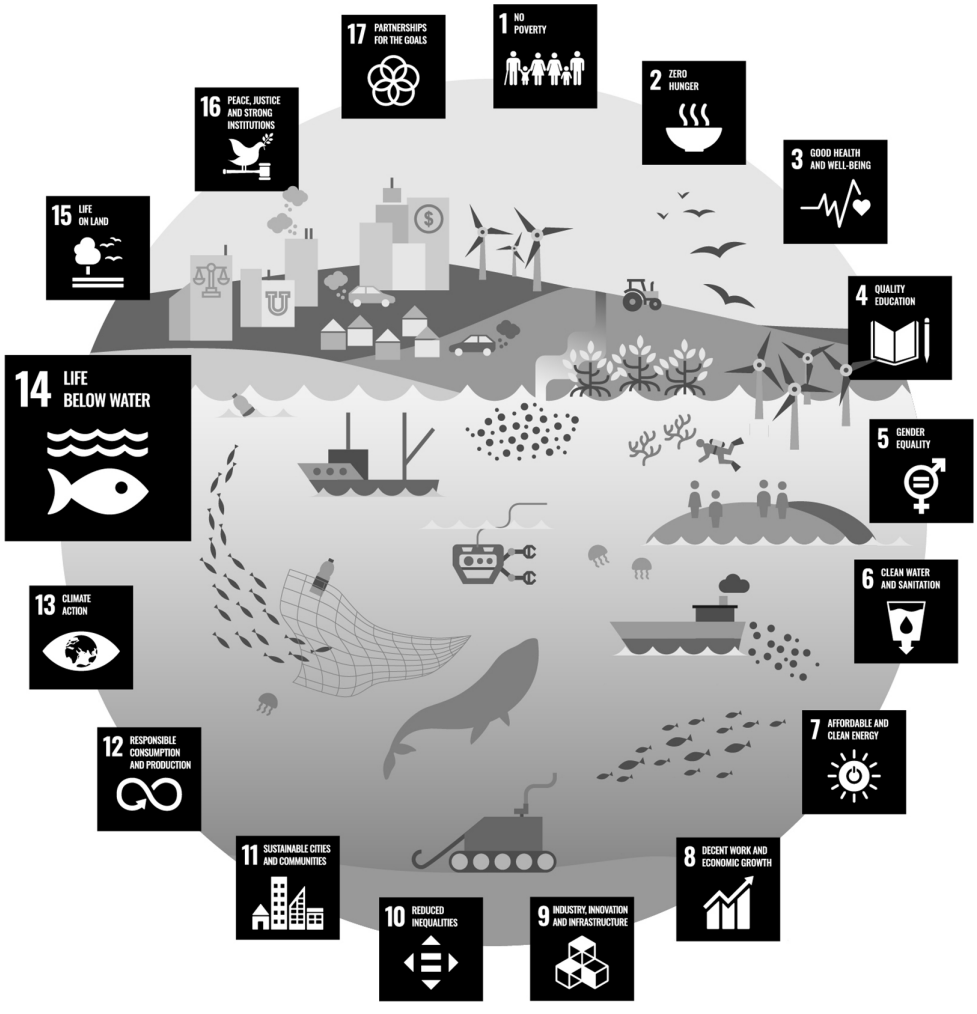
At the UN in 2023, the Agreement under the UN Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ Agreement) was adopted, with Member States continuing to sign and ratify the agreement since, and the first meeting of the Preparatory Commission for the entry into

Table 1.1 Targets formulated under SDG 14 "Conserve and sustainably use the oceans, seas and marine resources for sustainable development"

Number	Descriptive text
14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution
14.2	By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans
14.3	Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels
14.4	By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics
14.5	By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information
14.6	By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation
14.7	By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism
14.a	Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries
14.b	Provide access for small-scale artisanal fishers to marine resources and markets
14.c	Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of "The future we want"

Source: UN, 2015.

force of the agreement was held in April 2025. To spur the process, President Emmanuel Macron of France, as co-host of UNOC 3, made significant efforts in the lead-up to the conference to win the "race for ratification"[2] and achieve the 60 ratifications needed for the BBNJ Agreement to enter into force. Although this was not quite achieved at UNOC 3, States had indeed seized the opportunity to encourage their national parliaments, and by the opening day of UNOC 3, a total of 50 States, plus the European Union, had submitted ratifications of the



Source: United Nations Sustainable Development Goals: https://www.un.org/sustainabledevelopment

Figure 1.1 SDG 14 and ocean sustainability – an integral part of the 2030 Agenda and broader SDG framework[1]

treaty (Cater, 2025). The needed number of 60 ratification was finally achieved in November 2025, and the BBNJ Agreement entered into force after the 120 day wait period on 17 January 2026, just over 2 years after its adoption (Editorial, 2025a; Lennon, 2026). The achievement comes after 20 years of hard work and negotiations from governments with involvelment of multiple other actors to reach consensus on a legal framework to conserve and susainably use the world's ocean areas beyond national jurisdiction, adressing both the watercolumn and and the seabed.[3] Praised as a major milestone for ocean conservation and governance, there is

still considerable work ahead for States to translate the intention of the BBNJ Agreement into procedures, rules and practices (see Chapter 18).

Climate change, as one of the greatest pressures on the planet, and specifically the ocean and ocean-dependent coastal communities, challenges global diplomacy and multilateralism in novel ways. As global governance frameworks struggle to integrate ocean and climate regimes, recent efforts such as the Ocean and Climate Change Dialogues at the UN Framework Convention on Climate Change (UNFCCC) and the global stocktake under the Paris Agreement aim to bridge this gap (Dobush et al., 2022; Puno, 2024; Ricketts & Olutoke, 2024; see also chapters 4 and 20). Meanwhile, at the International Maritime Organization in London, deliberations continue for advancing the regulatory framework for marine geoengineering and considering possible climate solutions, such as ocean alkalinity enhancement, for removing carbon dioxide from the atmosphere (Proelss, 2022; Scott, 2023; Vivian & Del Savio, 2024). Recent advisory opinions from leading international legal institutions, such as the International Court of Justice[4] on the obligations of States for acting on climate change, or the International Tribunal for the Law of the Sea on climate change and international law (International Tribunal for the Law of the Sea, 2024), provide new momentum that is also relevant for the ocean–climate nexus – even if these are legally non-binding.

Another global challenge that highlights the interconnectedness of humans and the ocean is the – meanwhile omnipresent – pollution of the marine environment, and as a defining feature of the Anthropocene, marine plastic pollution (McGlade et al., 2021; Tuuri & Leterme, 2023; United Nations Office of Legal Affairs, 2021; Worm et al., 2017). Starting in 2022, global negotiations through an intergovernmental negotiating committee (INC) to develop an international legally binding instrument to end plastic pollution, including marine pollution, have been held under the auspices of the UN Environment Programme. Hopes were high for the second meeting of the fifth negotiation round for a global plastics treaty (INC-5.2) that took place in Geneva, Switzerland, in August 2025, to finalise negotiations and establish the treaty (Spring et al., 2025). However, agreement on the treaty could not be achieved in this round of negotiations and it remains to be seen how the international community will overcome existing challenges in future negotiations (Sanderson, 2025; Editorial, 2025b). Questions remain in regard to linking the agreement to existing governance structures and processes at the global, regional, national, and local levels, which will require attention to successfully tackle plastic pollution (Maes et al., 2023), while an increasing number of voices suggest a source-to-sea governance approach for holistic and effective pollution mitigation, including for marine plastics pollution (Van Leeuwen et al., 2025; see also Chapter 2).

Other ongoing global processes aim to ensure the more sustainable use of marine resources or to halt practices for which there are currently no approved or appropriate standards. These include negotiations at the World Trade Organization to establish binding global rules to curb harmful fisheries subsidies that contribute to overfishing and the depletion of fish stocks (Irschlinger, 2025; Nedumpara & Hajela, 2024; Yu & Liu, 2024); and the Agreement on Fisheries Subsidies that was adopted in 2022 has entered into force in September 2025.[5] Meanwhile, a growing coalition of States is demanding a moratorium or precautionary pause on deep seabed mining,[6] while the International Seabed Authority is working to develop a rulebook to guide potential future mining activities in the deep sea (Pickens et al., 2024; Singh, 2021). However, experts are pointing out that it would be extremely difficult, if not impossible, to align deep-sea mining with SDG 14 (see Chapter 19).

Recognising that knowledge plays an undeniably significant role in underpinning decision-making for ocean sustainability, Member States of the UN General Assembly proclaimed the UN Decade of Ocean Science for Sustainable Development (United Nations General Assembly, 2018, para. 292). The Decade commenced in 2021, and as demonstrated by the success of the UN 2024 Ocean Decade Conference in Barcelona which welcomed 4,500 participants (in-person and online) from all over the world,[7] ocean science is now receiving more attention than ever before – and advancing to improve knowledge integration or employ new digital solutions such as digital twins of the ocean (see chapters 7, 14, and 15 for further detail). Rio de Janeiro in Brazil will host the next UN Ocean Decade Conference, in 2027, which among other things will track progress towards the priorities set by the Barcelona Statement.[8]

Bringing all of these issues together, at UNOC 3, a political declaration entitled "Our ocean, our future: united for urgent action" was adopted by over 170 States. Also termed the 'Nice Declaration', it commits States to adopt urgent actions to conserve and sustainably use the marine environment, including with respect to the establishment of marine protected areas (MPAs), decarbonisation of maritime transportation, resource mobilisation, and pollution prevention (United Nations, 2025). Furthermore, several other voluntary commitments, an important tool established under SDG 14 (Chan, 2024; Neumann & Unger, 2019; Vierros, 2021), were made, ranging from MPA coverage expansion to financial commitments for specific marine conservation actions. Together with the Nice Declaration, these comprise the Nice Ocean Action Plan.[9] The third UN Ocean Conference was a great success also in terms of generating awareness about the role of the ocean, emphasising the "interlinkages between the ocean, climate and biodiversity" (United Nations, 2025, para. 7), and renewing and generating new political commitments to urgently address the challenges that threaten ocean health. Keeping this momentum, the fourth UN Ocean Conference, UNOC 4, has already been announced, to be held in 2028 and hosted by Chile and Korea.[10]

II. OCEAN HEALTH AND SUSTAINABILITY: FACING COMPLEX CHALLENGES

Despite the multitude of activities and actors engaged for a sustainable ocean, there are only a few more years to achieve the aspirational 2030 Agenda, including its dedicated ocean goal SDG 14, and many of the targets of SDG 14 have already passed their original timeline (see Table 1.1). As the world's ocean is faced with multiple and mounting challenges, and with it the communities that depend on it, the pace and scale of challenges can feel like an arms race that is difficult to win. The ocean and seas provide essential benefits, or ecosystem functions and services, for people and the planet. They regulate the global climate, offer a source of food and medicines, secure livelihoods, and help to transport essential goods as well as providing opportunities for culture, education, and recreation (Visbeck et al., 2014a), mandating global efforts for sustaining the ocean as a global lifeline. However, marine ecosystems are under enormous threat. Anthropogenic uses of the ocean are widespread and intensifying – and the environmental pressures they create through pollution, overfishing, habitat destruction, or climate change, individually and cumulatively, undermine the health and resilience of marine ecosystems to continue to play their important role for today's society as well as for future generations. For example, despite decades of effort, international fisheries remain largely

unsustainable due to a fragmented legal regime, highlighting the need for a shift towards a more holistic "global oceans governance" approach that emphasises adaptability, coordination, and an evolving framework for managing high seas fisheries (Blanchard, 2017).

In light of the dire state of the marine environment (United Nations Office of Legal Affairs, 2021), and the interconnectedness of people, their well-being, and the ocean (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 2019), pursuing ocean health through the goals and targets set out under the 2030 Agenda remains a challenging and demanding task. Other global policy agendas and goals that speak to "people and planet", in the words of the 2030 Agenda, reinforce the need to transform ocean governance – that is, to achieve coherence across policies, sectors, and scales; embed standards such as transparency and inclusivity; and achieve transformative change by fostering new approaches (Bennett, Morgera & Boyd, 2024; Boteler et al., 2022; Brodie Rudolph et al., 2020; Chan et al., 2019; Ferse, 2023; Lombard et al., 2023; O'Brien et al., 2024; Pereira et al., 2023). Whether considering the climate objectives set out under the UNFCCC and the Paris Agreement, or the GBF (including its 2030 targets and 2050 goals) for living in harmony with nature – it is all connected and complementary to each other. The 2030 Agenda, designed as an indivisible whole, and the 17 SDGs provide a guide to understand and foster such efforts (Toth et al., 2021; Weitz et al., 2018), from biodiversity conservation to climate resilience, including within the realm of ocean governance (Andriamahefazafy et al., 2022; Gissi et al., 2022; Obura, 2020).

Among these interwoven agendas, climate change stands out as both a direct threat to ocean health and a cross-cutting governance challenge that demands urgent integration across sectors and scales. As a key driver of ocean change, climate change increasingly disrupts the foundations of marine ecosystems and the human systems that depend on them. According to the European Copernicus service,[11] the world reached the Paris Agreement's temperature threshold of 1.5 degrees Celsius for the first time in 2024 – a milestone that signals intensifying risks for the ocean. Ocean warming, acidification, deoxygenation, and sea-level rise are only the direct effects of global climate change on the world's oceans, seas, and coasts and their ecosystems (see Chapter 4), compounding long-standing issues such as widespread loss of biodiversity, declining fish stocks, alarming levels of nutrient pollution, and so on, affecting essential benefits the marine environment provides for humanity. This has almost inevitable repercussions on livelihoods and economies around the globe, and attention must be paid to the socio-political implications of such shifts in planetary conditions.

III. TOWARDS AND BEYOND THE 2030 AGENDA: OVERCOMING SETBACKS AND UNLOCKING MOMENTUM FOR OCEAN SUSTAINABILITY

Recent assessments tracking progress of the SDGs have determined that most, if not all, of the goals will not be met before the approaching 2030 deadline (Fuso Nerini et al., 2024; Sachs, Lafortune & Fuller, 2024; Sachs et al., 2025). According to the 2025 *Sustainable Development Report* (Sachs et al., 2025), only 16.7 per cent of SDG targets are on track globally, and SDG 14 'Life Below Water' is listed as one of five SDGs particularly off track globally. Although the adoption of the 2030 Agenda and its SDGs, specifically SDG 14, marked a critical step forward in global ocean governance for addressing the challenges, as highlighted above, progress has been uneven and, in several key areas, regressive. Under SDG 14, specifically the targets

related to ocean acidification (14.3), overfishing (14.4), economic benefits for Small Island Developing States (SIDS; 14.7), and scientific knowledge (14.a) are off track or deteriorating (United Nations, 2024). These trends are mirrored in assessments, which identify persistent barriers such as weak institutional coordination, limited political will, and inadequate financing that hinder more effective governance for delivering the SDGs (Beisheim, 2023; Haas & Ivanovskis, 2022; O'Brien et al., 2024). SDG 14 has been determined the least funded of all the SDGs (Conrad et al., 2022; Organisation for Economic Co-operation and Development, 2020), and a lack of progress may also be due to a lack of investment, limited research capacity, inconsistent monitoring and reporting, and limited data. Moreover, overlapping global crises – including the COVID-19 pandemic and the ongoing transgression of critical planetary boundaries – have compounded these challenges and undermined the resilience of ocean systems (Richardson et al., 2023; Rockström et al., 2024).

After more than ten years, achieving the aspirations of the 2030 Agenda for the ocean remains a challenge. While significant effort has been made to advance knowledge, transform policies, and secure commitments towards a path of ocean sustainability, with five years remaining at the time of writing, it is necessary to accelerate progress on the 2030 Agenda and SDGs, and of SDG 14 in particular. Going forward, it will be essential to reconsider what must be done to make progress, and how setbacks can be overcome and momentum be unlocked. Foremost, it will require a renewed commitment to integrated, accountable, and equitable governance structures and approaches, supported by robust scientific evidence and long-term transformations. This also includes strengthening institutional coherence, accountability mechanisms, and political commitment (Beisheim, 2023; Biermann et al., 2023). These transformations should build on strong sustainability principles and foster inclusive, ecosystem-based management, where people and planetary boundaries are at the centre of decision-making (Boteler et al., 2022; McKinley, McElduff & Ritchie, 2024; Rockström et al., 2024). Transition theory suggests that unlocking structural change involves enabling niche innovations, disrupting path dependencies, and shifting dominant regimes (Brodie Rudolph et al., 2020; Lombard et al., 2023). This requires addressing, among other things, power asymmetries and conflicting interests – including for the blue economy (Bennett, 2019; Cisneros-Montemayor et al., 2021).

At the core lies the need for equitable, collaborative governance models (Bodin, 2017; Claudet et al., 2024) that are tailored to contexts – especially across the "tropical majority" (Spalding et al., 2023). Here, it is important to ensure adequate financing and boosting of capacity, including for fostering knowledge, science, and data, to underpin evidence-based decision-making and accelerate action. This also entails ensuring collaboration not only with science, but Indigenous Peoples, local communities, and marginalised communities, with their free prior informed consent, and the private sector. Initiatives like the Marine Regions Forum exemplify the needed shift towards inclusive approaches that bridge governance, science, equity, and collective action by fostering knowledge co-production, stakeholder collaboration, and adaptive learning (Neumann et al., 2021; Weiand et al., 2021). Importantly, the co-production of knowledge must recognise diverse worldviews and integrate knowledge systems to advance justice and sustainability (de Vos et al., 2023; Fazey et al., 2020; Ferse, 2023; Frazão Santos et al., 2023; Muhl et al., 2023).

Furthermore, effective and just SDG implementation hinges on ocean science that is transdisciplinary, inclusive, and oriented towards problem-solving (Ison et al., 2024; Mauser et al., 2013; McKinley, Acott & Yates, 2020; Partelow et al., 2023). Innovations like digital twins

(Tzachor, Hendel & Richards, 2023; see also Chapter 15), the proposed International Platform for Ocean Sustainability (Cavaleri Gerhardinger et al., 2023; Singh et al., 2023), and science diplomacy (Polejack, 2021) offer tools for inclusive and anticipatory governance.

Importantly, countries and groups of countries must double down on their commitments, by aligning their priorities towards the achievement of the SDGs and SDG 14 and establishing strategies, including mechanisms and tools, institutions, partnerships, and infrastructures (including digital) to collectively progress towards sustainable development (see also Fuso Nerini et al., 2024). Voluntary commitments of State and non-State actors under the UN's Ocean Conference track and other ocean-related fora, such as the Our Ocean conferences, have emerged as a new tool for promoting and pledging action (Chan, 2024; Division for Sustainable Development, Vierros & Buonomo, 2017; Neumann & Unger, 2019; Romero, 2018; Vierros, 2021; Vierros, 2025; Voyer et al., 2021). But to be truly transformative, rigid assessments of performance and gaps via dedicated pledge and review mechanisms, or similar instruments, would need to be put in place (Neumann & Unger, 2019).

And how should we move on once we have reached the year 2030? Given that many of the SDGs are unlikely to be fully achieved by the 2030 deadline, they should remain at the core of global cooperation, serving as both a barometer for global progress and a unique global framework for continued collective action. As Biermann et al. (2023) suggest, rather than redesigning the SDGs after 2030, reforms should be considered to strengthen their governance and ensure a more ambitious and effective global policy and governance framework for the future. This will be even more important in a world where multilateralism is under increasing pressure.

Furthermore, the longer-term GBF vision of a world "living in harmony with nature where by 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people" (Convention on Biological Diversity, 2022, Annex, para. 10), and its four outcome-oriented goals to protect and restore nature, prosper with nature, share benefits fairly, and invest and collaborate by 2050, could be helpful in this endeavour. The GBF targets (which, like the SDGs, are also due in 2030) were designed to be action-oriented with a view to achieving the outcome-oriented goals by 2050. From an environmental governance perspective, the GBF is richer in detail than the SDGs, and together with multiple other global and regional policy instruments provides essential guidance and enabling tools (including financial mechanisms) to support the implementation of the SDGs. Fuso Nerini et al. (2024, p. 556) suggest adapting and extending the SDGs to 2050, including by updating targets and adding interim ones towards 2050 "that align with science and maintain high, yet achievable, national and global ambitions". With regard to SDG 14, they call for including, among others, the newly agreed '30x30' target of the GBF ("By 2030: Deliver on the Global Biodiversity Framework target of conserving 30% of land, water and seas, and restore 30% of degraded ecosystems"), and a more explicit target on restoration ("By 2050: Restore nature resilience in all major terrestrial and marine biomes for human health and planetary stability (buffering capacity to withstand shocks and stress)"; Fuso Nerini et al., 2024, p. 557). And perhaps we must also rethink SDG 14 'Life Below Water' in terms of its phraseology and framework, and challenge the dominant governance paradigms for a better recognition of the interconnected and relational nature of the ocean, to move away from the conventional terrestrial bias in spatial thinking and envision the ocean along its multiple dimensions (Peters, 2020; Steinberg & Peters, 2015; see also Chapter 21).

It is with the aim of spurring continued action that this book was conceived and written. For those working towards the targets of SDG 14, and the broader constellation of global goals and targets that relate to ocean sustainability, the message is clear: we must keep going – and foster change and transformation to achieve the goals set, towards and beyond the 2030 Agenda and SDGs.

IV. STRENGTHENING OCEAN GOVERNANCE: A CRITICAL IMPERATIVE

The SDGs, including SDG 14, offer a vision of where the world should go for a more sustainable future – but they do not offer a specific path on how to get there. Effective ocean governance is a prerequisite for the successful conservation of ocean ecosystems and sustainable use of marine resources, and to secure their future for generations to come. This refers to the laws, rules, institutions, and processes established to manage the ocean and seas, and to the actors involved. But (global) ocean governance is challenged by the intertwined nature of the multiple ocean issues and crises, including recent geopolitical crises that impact established international regimes and multilateral approaches, and inherent complexities. Ocean governance consists of overlapping regimes and varying mandates or authorities, with the UN Convention on the Law of the Sea providing a global legal framework for the regulation of all activities at sea, supported by implementing agreements for the high seas and deep seabed, including the UN Fish Stocks Agreement (see Chapter 8). These legal frameworks are complemented by regional fisheries management organisations, regional seas conventions and action plans, and several other global and regional frameworks and bodies. This means that roles and responsibilities to both protect the ocean and manage its resources are spread across a variety of laws, institutions, and governance levels with no single unifying body or mechanism to coordinate a shared response to ocean challenges (Fanning & Mahon, 2020). Differing mandates, legal frameworks, and overlapping jurisdictions add structural complexity and complicate governance and decision-making for the marine environment (Blanchard, 2017; Singh & Jaeckel, 2018).

Governance regimes must overcome the fragmentation that persists across jurisdictional boundaries, governance levels, and sectors, which undermines coherent action on SDG 14 and many other policy goals. Efforts for multi-layered governance arrangements, polycentric models, and nested authority across scales may help to reduce ambiguity in mandates, enhance responsiveness, and foster accountability across them (Mahon & Fanning, 2019; Van Leeuwen et al., 2024; see also Chapter 16). However, as Langlet & Vadrot (2024a; 2024b) show, aligning these institutions in a coherent regime complex remains problematic – especially in implementation and compliance.

To effectively advance ocean sustainability, it is essential to ensure coherence and strengthen ocean governance across major global processes, such as the BBNJ Agreement; the Convention on Biological Diversity, including through the implementation of the GBF; and the 2030 Agenda and SDG 14 – as they reach key milestones and require renewal (Boteler et al., 2022; see also chapters 3 and 18). Also, ensuring coherence between public and private governance will be essential as human activity increases, specifically on the high seas (Blasiak & Claudet, 2024). At the level of marine regions, arrangements and coordination mechanisms such as the Convention for the Protection, Management and Development of the

Marine and Coastal Environment of the Western Indian Ocean Region (Nairobi Convention) offer opportunities for more granular and context-specific governance, capable of linking actors and actions between national and global policies (Mahon & Fanning, 2019; Wright et al., 2017; see also Chapter 9). They are considered key enablers of SDG 14 delivery, but also vary in capacity.

Despite widespread attention being paid to sustainability, humanity continues on unsustainable paths due to a focus on easily implemented but ultimately weak interventions, necessitating a shift towards more impactful, systemic changes centred on reconnecting with nature, restructuring institutions, and rethinking knowledge creation and application (Abson et al., 2016). Addressing these challenges requires transformative change and systemic interventions at key leverage points in society (Abson et al., 2016; Leventon, Abson & Lang, 2021). A balanced approach must reconcile ocean conservation and protection with sustainable use (Kittinger et al., 2024), advancing ecosystem-based management, including in fisheries, and leveraging benefits such as the spillover effects from well-managed MPAs. Such spillover benefits can generate broader ecological and fisheries gains, but governance design is critical to ensuring equity and effectiveness (Franceschini, Lynham & Madin, 2024). Advancing development cooperation, sustainable financing, and the concept of a 'blue economy' are further critical steps for delivering on the SDGs and promoting sustainable development, including for addressing interconnected issues between conservation, food, and livelihoods. This requires, among other things, comprehensive efforts and collaboration across sectors, actors, and institutions to harness the benefits – and to overcome the diverse gaps and challenges (Benzaken et al., 2024; Singh et al., 2021; Sumaila et al., 2023; Sumaila et al., 2021). Chapters 5, 6, 10, 11, 12, and 17 provide further insights and critical reflections on these aspects.

Further governance challenges encompass a lack of integration of land-based sources and pressures (like agriculture, pollution, and river flows) with marine governance (Boteler et al., 2022). Integrated land–sea governance (Pittman & Armitage, 2016; Schlüter et al., 2020; Tocco et al., 2024), source-to-sea approaches (Van Leeuwen et al., 2025; see also Chapter 2), and marine spatial planning (Gissi et al., 2022; Reimer et al., 2023; Wedding et al., 2024; see Chapter 13) offer practical pathways to operationalise transitions. Large-scale coastal restoration (Saunders et al., 2024), decarbonisation of shipping grounded in environmental baseline values (Li & Hu, 2024), and robust partnerships (Rosas & Pattberg, 2023) are further examples of how transformative action aligned with equity, science, and governance reform can help realise the SDGs – now and beyond 2030. However, a prevailing knowledge–action gap strains regulatory systems and policy implementation, oftentimes grounded in weak institutional capacity for translating emerging marine science and other relevant knowledge into regulations, or co-creating knowledge for action (Jacquemont et al., 2025; Räsänen et al., 2024). For example, while emerging approaches for marine carbon dioxide removal hold mitigation potential to fight climate change, they also raise concerns about environmental risks and equity, and unveil regulatory gaps that require attention and mandate foresight-oriented, adaptive approaches (Röschel & Neumann, 2023; Röschel & Neumann, 2024; see also Chapter 20).

Progress also hinges on inclusivity, equity, and justice; knowledge innovation and integration; and bridging boundaries (Ferse, 2023). Sustainable ocean governance intersects with justice and equity through provisions made in SDG 14, for example via target 14.7 on the economic benefits to SIDS and least developed countries (LDCs) from the sustainable use of marine resources (see also Chapter 6). To effectively advance ocean sustainability,

organisations must prioritise and mainstream equity and justice by building internal capacity, supporting relevant research, and integrating these principles into all policies and practices (Bennett, 2022). Trade-offs between economic development and conservation must be carefully managed to ensure fair outcomes (Armstrong, 2020; Baker, Constant & Nicol, 2023; Haas, 2023). Furthermore, as marginalised groups – particularly in the Global South and among Indigenous Peoples and Local Communities – are still underrepresented in decision-making, more inclusive and ethical approaches to both the negotiation and implementation of the SDGs are needed, addressing intergenerational and non-human equity concerns (see Chapter 22). The recognition of a human right to a clean, healthy, and sustainable environment, including the ocean, underscores the moral imperative to act (Bennett, Morgera & Boyd, 2024). In sum, decisive, inclusive, and just action is needed to restore ocean health and secure a sustainable future for generations to come.

V. *THE ELGAR COMPANION TO OCEAN GOVERNANCE AND THE SUSTAINABLE DEVELOPMENT GOALS*

The Elgar Companion to Ocean Governance and the Sustainable Development Goals is divided into four distinct parts. An introduction is provided here in Part I, while Part II explores progress on the ocean targets of the 2030 Agenda and challenges for their achievement. Part III covers mechanisms established, or needed, to foster progress towards the 2030 Agenda and how these can be advanced, while Part IV highlights emerging issues and potential entry points for furthering ocean sustainability.

A. Part II: The 2030 Agenda for Sustainable Development and the Ocean

Part II focuses on the ocean-related goals and targets of the 2030 Agenda, specifically SDG 14. The chapters present progress, opportunities, and challenges towards attaining SDG 14 and other related SDGs, highlight key trends and emerging issues, outline relevant policy processes and challenges, and provide an outlook towards the year 2030 and beyond. The chapters are organised by topical strands and nexus areas, reflecting on the interlinked goals and targets of the 2030 Agenda. Chapters offer insights into the prevention and reduction of marine pollution (Chapter 2), and new ideas for the conservation, protection, and management of marine ecosystems (Chapter 3) as well as for addressing the climate–ocean nexus (Chapter 4). Reflections are also provided on sustainable fisheries management (Chapter 5), and building sustainable ocean economies for SIDS and LDCs (Chapter 6), and considerations for advancing ocean knowledge, research, and data (Chapter 7) and on the implementation of international law (Chapter 8) for the sustainable use of the ocean are offered.

B. Part III: Implementing the 2030 Agenda for the Ocean

The chapters in Part III introduce the mechanisms, processes, and actions put in place to support, guide, and shape the implementation of the 2030 Agenda for the world's oceans, seas, and marine and coastal resources. The chapters provide a selection of possible approaches and solutions to enhance or accelerate implementation. They cover opportunities for advancing ocean sustainability, examining the implementation of SDG 14 in sub-Saharan Africa

(Chapter 9), and the role of partnerships and mechanisms for development cooperation (Chapter 10). Further topics covered include blue finance (Chapter 11), area-based measures (Chapter 12), and marine spatial planning (Chapter 13) as levers for implementing the 2030 Agenda. Finally, Part III explores knowledge co-creation at the science–policy interface (Chapter 14) and opportunities for ocean governance from digital twins of the ocean (Chapter 15).

C. Part IV: Governing the Ocean for a Sustainable Future

The chapters in Part IV discuss specific or emerging issues of ocean governance and entry points to further advance the implementation and attainment of the goals and targets laid down in the 2030 Agenda for the ocean. Chapters explore opportunities for regional and integrated approaches for ocean governance (Chapter 16), reflect on the sustainable blue economy (Chapter 17), and offer insights into biodiversity conservation in areas beyond national jurisdiction (Chapter 18). Part IV also covers ongoing critical debates such as those surrounding deep seabed mining (Chapter 19) and marine carbon dioxide removal (Chapter 20), and discusses their implications for the SDGs. Finally, it provides critical thinking and new ideas around the framing of SDG 14, ocean governance, and ocean equity (chapters 21 and 22).

VI. ABOUT THIS BOOK: A MESSAGE FROM THE EDITORS

The 2030 Agenda, through SDG 14, recognises that a healthy ocean is vital to the planet's future. Yet, achieving this ambitious goal requires navigating complex governance challenges at the intersection of humans and marine ecosystems. This book explores both the opportunities and challenges facing ocean governance in the context of the 2030 Agenda.

It critically examines current legal, institutional, and organisational structures; highlights crucial interlinkages between SDGs; and charts pathways towards meaningful sustainability transformations. By integrating cutting-edge scientific research and grounded, real-world insights, this volume serves as a vital guidebook for policy-makers, academics, and practitioners alike.

The chapters provide knowledge-based recommendations targeted at increasing action towards ocean sustainability. Drawing on the diverse knowledge and experience of researchers and practitioners from around the world, the book seeks to ensure its relevance and applicability to readers from a wide spectrum of disciplines and sectors engaged in shaping the ocean's future – towards 2030 and beyond.

NOTES

1. The content of this publication has not been approved by the United Nations and does not reflect the views of the United Nations or its officials or Member States.
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