



### IMPROVING THE INTERNATIONAL OCEAN GOVERNANCE FRAMEWORK



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#### 1. INTRODUCTION

The 1982 UN Convention on the Law of the Sea (UNCLOS) lays down a legal and institutional regime for the world's ocean and seas, establishing rules to govern uses of the ocean, its resources, and the protection of the marine environment. It recognized that all problems of ocean space are closely interrelated and should be addressed as a whole. The existing ocean governance structure, that is the institutional and policy framework established to manage human activities and ensure the conservation and sustainable use of ocean resources for sustainable development, including blue economy opportunities, is however often criticized as insufficient to address the prevailing challenges facing the ocean.

Building on increasing global political and public awareness about ocean status, health and productivity, three major processes have been initiated under the umbrella of the United Nations. These processes also offer the potential to address some of the most important issues in ocean governance. First, an international legally binding instrument under UNCLOS for the conservation and sustainable use of marine biodiversity of areas beyond national jurisdiction (BBNJ) is currently being negotiated. Second, under the Convention on Biological Diversity (CBD), the process to agree a Post-2020 Global Biodiversity Framework has been initiated to replace the Aichi Targets, building on its efforts to ensure conservation, reduce pressures on terrestrial and marine biodiversity, promote its sustainable use, and safeguard ecosystem functions. Third, Sustainable Development Goal (SDG) 14 to "Conserve and sustainably use the oceans, seas and marine resources for sustainable development" as well as other ocean related SDGs aim to address holistically the current global challenges to sustainability under the 2030 Agenda for Sustainable Development - including specific challenges facing the oceans. These processes are underpinned by other global policy processes under the United Nations Environmental Assembly relevant to the ocean and seas as well as by the specific work streams under Multilateral Environmental Agreements (MEAs) such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Migratory Species (CMS), and the various Regional Seas Conventions and Action Plans established under UN Environment Regional Seas Programmes.

Other important global policy processes and relevant initiatives should also be taken into consideration when discussing improved ocean governance such as the implications for the ocean of UNFCCC work under the Paris Agreement, on-going work under the auspices of the International Seabed Authority (ISA) to develop a regulatory framework for the possible exploitation of mineral resources in the Area.

At the time of writing this paper all relevant ocean governance meetings were postponed amid the COVID-19 pandemic, including the 2020 UN Ocean Conference, the fourth meeting of the Intergovernmental Conference on the negotiation of a new legally-binding instrument for the conservation and sustainable use of marine biological diversity beyond national jurisdiction (BBNJ), and the EU International Ocean Governance Forum. In an effort to maintain momentum, preparatory processes have been moved online and meetings take place virtually. Although it is far too early for any assessment, it can be expected that the devastating human, societal and economic consequences of this crisis will also affect the way how humanity

is dealing and interacting with the ocean, and possibly also on international or regional collaborations and governance processes.

The Thematic Working Group 1 (TWG1) "Improving the international ocean governance framework" provides the opportunity to discuss options for change in the context of these and other relevant processes and developments. TWG 1 encourages "outside the box" thinking with a view to develop recommendations for strengthened international ocean governance, also reflecting on uncertainties and possible responses linked to the COVID-19 pandemic.

#### 2. KEY CHALLENGES IN OCEAN GOVERNANCE

**Increasing and cumulative pressure placed on marine ecosystems and biodiversity** is a major challenge to ocean governance. Direct pressure on marine biodiversity is largely caused by ongoing or intensifying human activities such as fishing and shipping, but also coastal and land-based activities such as oil and gas extraction, port development, agriculture, industry, urban expansion and tourism. Emerging activities such as deep seabed mining will potentially further threaten ocean health if they come to fruition (Levin et al., 2016; Fauna & Flora International, 2020). The pressures from these activities include, amongst others, extraction of living species or non-living material, physical disturbance to and destruction of the seabed and coastal habitats, plastic, nutrients and other pollution from land and sea, as well as underwater noise and light. **Compounding effects due to increases in anthropogenic greenhouse gas emissions** have resulted in rising ocean acidity, declining oxygen levels, warming waters, elevating sea-level and shifting ocean currents. The recent reports from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES, 2019) and the Intergovernmental Panel on Climate Change (IPCC, 2019) confirm continuing degradation trends of marine and coastal ecosystems, including from climate change, which require accelerated efforts from States to protect and sustainably manage these ecosystems. At the same time, in a context of a growing world population, including in coastal areas, and pressing development needs, dependence on a "healthy" ocean system and the need to foster a sustainable blue economy will come to the fore.

The existing ocean governance structure, that is the institutional and policy framework established to manage human activities and ensure the conservation and sustainable use of ocean resources, is often criticized as insufficient to address these prevailing challenges facing the ocean. There are important **regulatory and implementation gaps or weaknesses**, such as in the context of the conservation and sustainable use of BBNJ. Furthermore, the **ocean governance framework is fragmented**, both in terms of the sectoral institutions set up for the management of the different human activities as well as the different jurisdictions. Whilst specialisation of regulation is needed to manage specific sectors, the lack of coordination between sectoral approaches makes it difficult to achieve integrated management of pressures from various impacts and activities or to assess their cumulative effects. This also complicates the implementation of integrative horizontal policies such as the 2030 Agenda for Sustainable Development with its set of 17 interlinked SDGs.

UNCLOS divides the ocean into Areas Beyond National Jurisdiction (ABNJ), which includes the water column (the High Seas) and the seabed (the

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Area), as well as areas which fall under the sovereign rights or jurisdiction of States, which include the Exclusive Economic Zone (EEZ), the Continental shelf and the Territorial Sea. Thus, the ocean is functionally and geographically divided into different maritime zones, and subject to different legal regimes. This means that States' rights and responsibilities are also zonally divided, though jurisdiction may overlap, while some obligations such as the protection and preservation of the marine environment apply in all maritime zones. Despite jurisdictional distinctions all maritime areas remain physically and ecologically connected through ocean currents and migration of marine fauna, as well as through transboundary pressures stemming from human activities. Hence, anthropogenic pressures, including from land-based activities, translate into ecological and relating socioeconomic impacts in waters that are possibly located far from their source or in jurisdictional areas under different governance regimes. Yet most ocean-related activities are regulated and managed by sector specific rules and bodies that are not designed to consider cumulative and transboundary impacts or lack the capacity to consider impacts on marine biodiversity.

Indeed, not all institutions and actors may be adequately equipped to **coordinate or cooperate across sectors** and achieve effective measures (e.g. connected networks of marine protected areas), or to translate important sustainability principles, such as the precautionary principle, the polluter pays principle, the ecosystem approach, or transparent and inclusive decision-making processes, into practice. Such lack of coordination also exists between the various national government agencies, further intensifying challenges of ocean management and conservation. Hence, strengthening ocean governance at all levels and across all actors will be necessary to achieve global conservation goals.

Most fishing in the high seas or of highly migratory species is managed at the regional level by regional fisheries management organisations (RFMOs) focusing either on tuna and tuna-like species ("tuna RFMOs") or fish stocks other than tuna ("non-tuna RFMOs"). Implementation has often been considered a challenge and RFMOs have been criticized for mixed performances in implementing ecosystem-based management as well as gaps in spatial coverage and target species such as sharks or squid.

**Illegal, unreported and unregulated (IUU) fishing**, often stemming from poor domestic legislation as well as poor control over nationally registered and flagged vessels operating inside and outside national waters, remains a major challenge in ocean governance. It can hinder conservation efforts to address overfishing and thereby poses a serious threat to the sustainable management of fisheries and marine ecosystems, with additional implications for efforts to counter hunger and malnutrition. The urgency of this issue is underlined by SDG target 14.4, which stipulates the elimination of IUU fishing by 2020, as well as target 14.6 on the need to end subsidies contributing to overfishing also by 2020. **Monitoring, control and surveillance (MCS)** is critical for ending IUU and ensuring success of marine conservation and management in general, but effective MCS remains challenging where inadequate legal frameworks and resource limitations exist and often in relation to fishing activities in deep and distant waters of marine ABNJ (Cremers et al. 2020).

After all, safeguarding ocean health depends on effective governance frameworks supported by strong capacities and institutions. However, limited human and financial resources are a common problem for many organizations including their contracting parties, and securing adequate ca-

pacities and strategic and long-term funding for global or national processes is a key challenge for making ocean governance more effective (Free-stone et al., 2014; Shackeroff et al., 2016; Wright et al., 2017; Cicin-Sain et al., 2018). **Capacity building** therefore is a key enabler to strengthen national, regional and sectoral institutions as well as individual capacity to ensure that national representatives are able to effectively participate in governance processes and design and implement actions towards global objectives (Gjerde et al., 2018). In addition to capacity building, ensuring **long-term and consistent funding** for ocean measures that delivers the necessary protection of marine biodiversity and supports ocean conservation objectives is an essential component and enabler for ocean action (Laffoley et al., 2019). Total funding currently available for conservation from public sources is insufficient to deliver the agreed marine protection goals. Innovative financing sources, including from capital markets, offer significant potential to support the delivery of ocean solutions across initiatives, including for coastal ecosystems in national water as well as for ABNJ (Thiele and Gerber, 2017).

To further challenge ocean governance, **new and emerging activities are arising** which must be considered in line with the current state of governance to ensure that such initiatives do not overwhelm an already struggling system. For example, interest in **supporting a truly sustainable blue economy** from industry and States means that any benefits obtained from new or increasing marine resource use must be carefully weighed against possible deleterious consequences to the marine environment and effects on other users (this topic is explored in more detail in TWG2). For example, growing interest in deep sea mining poses a significant threat to marine biodiversity according to the current knowledge and findings, and judging from experiences resulting from exploratory licenses. Given the many unknowns, States should proceed with caution, guided by precautionary approach, and consider the available scientific evidence, or lack of such, when developing the regulatory framework for the possible exploitation of marine mineral resources in the Area under the auspices of the International Seabed Authority (ISA). Also possible alternatives such as the transformation towards a circular economy should be taken into account.

Another issue is lack of research and governance approaches of new ocean-based techniques for combatting climate change. Existing climate governance, including under the Paris Agreement, recognizes the contribution of marine renewable energy and restoration of coastal ecosystems in reducing net greenhouse gas emissions, with important co-benefits. However, the use of novel "geo-engineering" techniques such as ocean fertilization is not currently recognized. Moreover their impacts on ecosystems are potentially wide-ranging and their effectiveness as mitigation techniques it not well understood. Therefore, profound governance related questions such as how such initiatives would fit into the established legal and institutional framework still need to be addressed, including in regard to potential field experiments.

### 3. OPPORTUNITIES FOR IMPROVING OCEAN GOVERNANCE

This forward looking section considers different opportunities that arise through current key policy processes with relevance for the ocean and that could help to address some of the main 'challenges' as described above, namely: 1) the implementation of the SDG 14 and other related SDGs for the ocean, 2) the conservation and sustainable use of marine biological diversity, both within and beyond national jurisdiction, and 3) the ocean-climate nexus and the Paris Agreement.

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### 3.1. 2030 Agenda for Sustainable Development and SDG 14

The 2030 Agenda for Sustainable Development provides a framework for a holistic approach to address challenges facing the ocean. The 17 SDGs and their 169 targets are closely interlinked and neither the ocean-goal SDG 14 nor the other goals of the 2030 Agenda can be achieved in isolation. Moreover, **consideration of the interlinkages in the implementation process of the 2030 Agenda and SDG 14** can help to foster co-benefits arising when addressing linked goals in a coordinated and concerted way, and to minimize potential trade-offs (Griggs et al., 2017; Singh et al. 2018). To attain SDG 14 as an indivisible part of the 2030 Agenda requires thus, not only the development and implementation of appropriate strategies and policies, but also coordination and cooperation across sectors, across geographical and maritime boundaries, and between marine regions. Long-term thinking needs to be put over short-term gains to avoid conflicting strategies and ensure that, under the strategies chosen, SDG 14 can be achieved in an integrated and inclusive way along all three dimensions of sustainable development, i.e. in the sense of environmentally safe, economically feasible and socially just transformations to sustainability.

The need to structure the implementation processes of the 2030 Agenda and SDG 14 in line with such thinking has been discussed widely in science (Bowen et al., 2017; Schmidt et al., 2017; Nilsson et al., 2018; Weitz et al., 2018) as well as between experts and stakeholders (Institute for Advanced Sustainability Studies et al., 2020). At an expert group meeting in preparation of the 2018 High-Level Political Forum on Sustainable Development (HLPF), it was noted that “knowledge of interlinkages is critical for policy coherence ...”, and recommendations were made to employ suitable models and frameworks to identify priorities and contextualize interlinkages between SDGs (United Nations Department of Economic and Social Affairs, 2018), and challenges relating to SDG interlinkages were articulated by participants at the 2018 HLPF meeting (United Nations Economic and Social Council, 2018). But political implementation is still lagging behind in the uptake of recommendations and of urgently needed transformations of the existing governance systems. During this year’s preparatory process for the **2020 UN Ocean Conference**, the need to account for interlinkages in the SDG 14 implementation process was voiced again. One of the interactive dialogues therefore will be dedicated to **leveraging of interlinkages between SDG 14 and other goals** of the 2030 Agenda<sup>1</sup>, providing an opportunity to step up and foster action towards inclusive and coherent strategies in the implementation of SDG 14.

The fragmented nature of the current global institutional and legal frameworks challenges such aspirations, but here novel approaches such as a greater or different role for regional agreements could provide ways forward to enhance coordination and cooperation needed to achieve SDG 14 and other ocean-related goals. **Regional governance arrangements** have the potential to fill the gaps and facilitate synergistic implementation of ocean-related SDGs, for example along joint baselines and by working with regionally-specific and integrated targets and indicators (Institute for Advanced Sustainability Studies et al., 2020). The European Commission, for example, is committed to implementing the 2030 Agenda and recognises the need for a “coherent cross sectoral, rules-based international approach” to ensure that SDG 14 can be met (European Commission, 2016). In this regard, the EU’s Common Fisheries Policy (CFP), Marine Strategy Framework Directive (MSFD) and Marine Spatial Planning Directive (MSPD) interact well by conceptually interlinking the ecosystem approach, while implementation remains a challenge. Enhancing policy coherence within

ocean governance, both horizontally across institutions, i.e. within a State or region, as well as vertically between national, regional and global institutions through e.g. coordinated policy development, and establishing integrated science-policy advisory mechanisms or shared environmental principles and objectives will help to create the needed conditions and arrangements for effective policy implementation.

Closely linked to these issues is the procedure established for **progress reporting on SDG implementation** to the HLPF. At present, States are called to submit voluntary national reviews (VNR) on the basis of an indicator framework as established by the Inter-agency and Expert Group on SDG Indicators (IAEG-SDGs) and which foresees about one indicator per target (Allen et al., 2019; Beisheim, 2020; Nash et al., 2020). But as shown on the case of SDG 14 by Nash et al. (2020), this approach fails to reflect on the interwoven character of the SDGs and account for the interlinked nature of the 2030 Agenda, resulting in one-sided and incomplete reviews of progress and false interpretations, possibly compromising long-term sustainability – and, in the case of SDG 14 – long-term “ocean health” over short-term gains on selected goals and targets. The UN Statistical Commission has taken note of this issue and tasked a working group under the IAEG-SDGs with identifying interlinkages in the SDG indicator statistics and proposing strategies how to account for these interlinkages in policy-making and analysis within the SDG monitoring system (United Nations Statistical Commission, 2020). However, wider implementation of the proposed approaches yet remains to be seen. In addition, not all of the developed indicators have yet been consolidated as Tier I indicators, i.e. as conceptually clear, underpinned by internationally established methodology and standards, and for which data are regularly produced and sufficiently available (Inter-Agency and Expert Group on SDG Indicators, 2020). SDG target indicators, including for SDG 14, have been updated by the IAEG-SDGs in December 2019, but indicators for five out of ten SDG 14 targets (14.1.1, 14.2.1, 14.2.1, 14.a.1 and 14.c.1) still remain classified as Tier II indicators, i.e. as indicators for which data are still not regularly produced by countries (Inter-Agency and Expert Group on SDG Indicators, 2020).

Further challenges with regard to SDG 14 implementation include the question on how to handle the **four targets under SDG 14 that should be met by 2020**: targets 14.2 (sustainable management and protection of marine and coastal ecosystems), 14.4 (regulation of harvesting and ending of overfishing, IUU fishing and destructive fishing practices), 14.5 (conservation of at least 10% of coastal and marine areas) and 14.6 (addressing fisheries subsidies) should be achieved by 2020. Ten years before the ending of the 2030 Agenda, attainment of these goals is very likely failing (Nash et al., 2020; WWF, 2020) and a sound post-2020 strategy to ensure that these targets are not getting lost in implementation needs to be discussed and developed (Neumann and Unger, 2020). The main UN body overseeing the implementation of the 2030 Agenda, the HLPF, will be the appropriate venue to reflect on ways forward for SDG targets that expire; however as the HLPF has no mandate to take decisions on a way forward, and also in light of the excessive list of issues to be addressed in a limited timeframe by HLPF, no directions can be expected for dealing with those SDG 14 targets.

Overall, there is an **observed lack of progress towards SDG 14**. Acceleration and increased action is urgently needed to adequately respond to the environmental crisis documented by the recent IPCC and IPBES assessments (IPCC, 2019; IPBES, 2019). Opportunities for acceleration lie for example in evolving mechanisms of calls for voluntary commitments as

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fostered by the UN Ocean Conference under the auspices of UN DESA or other forums such as the Our Ocean Conferences and the United Nations Environment Assembly (UNEA). But here, progress may be hampered and goal/target attainment compromised by the observed absence of a strong pledge and review framework (Neumann and Unger, 2019). Opportunities for acceleration also lie in a regionalised coordination of the implementation, review and follow up. Furthermore, good-practice examples such as from the Baltic Sea region or the Western-Indian Ocean region could inspire action elsewhere (see Institute for Advanced Sustainability Studies et al., 2020: 42-51).

### ? Proposed questions for the working group discussion

The 2030 Agenda clearly offers opportunities to improve ocean governance through appropriate, cross-sectoral strategies and policies, but in order to accelerate progress towards achieving SDG 14 and with it the 2030 Agenda as a whole, **key questions** have to be answered:

- ▶ How to accelerate the implementation of SDG 14 as well as other ocean related SDGs and ensure that it will be met within the remaining time frame? What would be suitable strategies?
- ▶ How to deal with maturing targets and how to integrate newly set targets, e.g. as agreed as part of the Post-2020 Global Biodiversity Framework?
- ▶ What are possible approaches to address interlinkages between SDGs in the implementation process also taking into account other key SDGs with strong oceans linkages, and help States take holistic approaches towards a healthy, productive and resilient ocean?
- ▶ How can, in this context, cross-sectoral and cross-boundary marine related issues as identified in this document be addressed?
- ▶ What forms of cooperation, including at the regional level, should be developed to best help to translate global ambitions and targets into coordinated action, taking into account interactions and the need for accelerated progress?

### 3.2. Conservation and sustainable use of marine biodiversity

The conservation and sustainable use of marine biodiversity, both in ABNJ (on the high seas and in the Area) and within areas under the jurisdiction of the coastal state (in particular within EEZs), requires swift and coordinated action from States. Three major ocean governance processes have been initiated under the umbrella of the United Nations with the aim of advancing the conservation and sustainable use of marine biodiversity: (i) the development of an international legally binding instrument under UNCLOS for the conservation and sustainable use of BBNJ, (ii) the Aichi Biodiversity Targets as developed under the CBD and currently updated in the context of the Post 2020 Global Biodiversity Framework, and (iii) SDG 14. These processes are underpinned by the work of the UNEA and relevant MEAs.

**Area-based management tools (ABMTs), including marine protected areas (MPAs)**, are critical but underused instruments available for ocean conservation and will be one of the major avenues to achieve the objectives of the future BBNJ agreement. According to the Convention on Biological Diversity, an MPA is an area within or adjacent to the marine environment, together with its overlying waters and associated flora, fauna, and historical and cultural features, which has been reserved by legislation or other effective means, including custom, with the effect that its marine and/or

coastal biodiversity enjoys a higher level of protection than its surroundings. Current initiatives from States (Defra, 2019) and civil society argue that it is essential to protect 30% of the ocean by the year 2030 to conserve marine biodiversity and to help the ocean adapt to the impacts of climate change. However, given ecological connectivity most scientists deem it essential to go beyond establishing single MPA sites by creating a coherent and ecologically representative network of effective and well-managed MPAs as well as ensuring that in general all uses are ecologically sustainable. Similarly, designation alone of MPAs does not deliver any conservation value. Comprehensive and fully implemented management plans that are supported by legislation, stakeholder support, sustainable financing, MCS and rules for enforcement are needed. Next to MPAs, there is a great variety of sectoral ABMTs, e.g. to regulate bottom fisheries for the protection of Vulnerable Marine Ecosystems (VME) through Regional Fisheries Management Organizations (RFMOs) or spatial navigation measures such as Particular Sensitive Sea Areas (PSSAs) through the International Maritime Organization (IMO). In addition, there also exist Other Effective Area-based Conservation Measures (OECMs), which are discussed within the context of the Convention on Biological Diversity. However, no definition of OECMs has yet been recognised by CBD Parties, and the concept is still unclear, especially when associated with areas important for ecosystem services (Diz et al. 2018). Due to the sectoral approach to ocean governance and the different jurisdictional zones in the ocean, it will be essential to develop new forms of cooperative spatial governance. Approaches should consider both within and beyond national jurisdiction to ensure that States and organizations cooperate and agree on the required complementary management measures for a specific area or networks to reach this goal. Marine Spatial Planning based on tools such as strategic environmental assessments and development of sectoral and cross-sectoral biodiversity strategies and action plans should also be considered).

Whilst most MPAs, with a few exceptions such as in the North-East Atlantic under OSPAR, are located in national waters, the currently on-going BBNJ negotiations represent a major opportunity to bolster area-based management, including MPAs, in ABNJ. However, so far only few discussions have taken place on how to facilitate the systematic establishment of a coherent network of MPAs. This is a significant issue that warrants attention in order to fully employ MPAs to conserve marine biodiversity in ABNJ and to meet objectives agreed by the international community. The criteria as well as the information related to Ecologically or Biologically Significant Marine Areas (EBSAs) that have been described through regional workshops under the CBD, as well as VME identified and under fisheries restrictions established by RFMOs, could be used as a starting point to identify and coordinate action for marine areas in need of protection. This may require a mix of global and regional approaches and capacities for coordinating ABMTs and establishing MPA networks to facilitate connectivity and network coherence, appropriate MPA design, placement and size, and effective management, as well as monitoring and reporting against set targets.

Furthermore, as ocean pressures and marine living resources alike are transboundary by nature, MPAs can only be effective at the global scale if complemented by **effective ecosystem-based management and sustainable ocean-use practice in ocean areas outside of MPAs**, both within and beyond national jurisdiction. Overall, halting loss of marine biodiversity and supporting resilient ocean ecosystems require a shift away from conventional marine management, typically characterised by single species, single issue approaches, and towards an approach that views oceans as holistic systems.

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In addition to considering the potential benefits of MPAs, how the integration of biodiversity concerns into other areas such as Maritime Spatial Planning or climate mitigation and adaptation policies must also be explored.

### ? Proposed questions for the working group discussion

- ▶ What key scientific questions need to be addressed in order to support governance approaches to develop a coherent global network of effective and well-managed MPAs, including in ABNJ?
- ▶ What are key capacities and means of implementation required to work towards the vision of a coherent global network of effective and well-managed network of MPAs covering at least 30% of the world's ocean by 2030 as proposed in the context of the Post-2020 Global Biodiversity Framework? What is needed in the designation and implementation process and how could the EU provide support?
- ▶ What regulatory issues need to be addressed to facilitate a holistic and cooperative cross-sectoral approach for identifying, designing and implementing (including Monitoring, Control and Surveillance and enforcement) networks of ABMTs and MPAs, including in ABNJ? How would MPAs and other ABMTs complement each other in a network?
- ▶ What financial means will be required to realize the goal of a global MPA network and how could innovative financing solutions, including public-private partnerships and capital market instruments, together with coordinated development cooperation provide assistance in achieving this vision?
- ▶ How to ensure that MPA networks are complemented by effective ecosystem-based management that addresses key pressures (such as from fishing, shipping, land based sources, and climate change) with an impact on marine biodiversity and ecosystems also in ocean areas outside of MPAs?

### 3.3. Climate and ocean nexus

The IPCC 2019 Special Report on the Ocean and Cryosphere in a Changing Climate has sent an urgent message to remind global policy makers and the public of the dramatic effects of climate change on the ocean: sea levels are rising and the waters are warming, acidifying and losing oxygen, together causing serious impacts on marine ecosystems – and, as a consequence, also on coastal populations, livelihoods and blue economy opportunities. As a result, important keystone species and ecosystems such as warm-water coral reefs, seagrass meadows, and kelp forests will face high to very high risks by the end of this century if global warming exceeds 2 °C, in the case of warm-water corals already at warming beyond 1.5 °C (IPCC, 2019). Direct impacts from warming and deoxygenation and the indirect effects via changes in primary production are likely to impact the abundance and biomass of the biota on the seabed and in the water column, with significant consequences for vital ocean functions, such as changes in fisheries catch (Cheung et al. 2010; Barange et al. 2014) and sequestration of carbon (e.g. Ashford et al., 2018; Rogers, 2015; Sumaila et al., 2019).

Regulating human activities occurring within the ocean and protecting marine ecosystem functions can play an important role for climate change mitigation, adaptation and for fostering resilience as shown in recent analysis and reports (e.g. Gattuso et al., 2018; Because the Ocean 2019), and for the attainment of the 2030 Agenda (Singh et al., 2019). The importance of coastal and marine ecosystems as sinks and reservoirs of greenhouse gases has been widely recognised and the Paris Agreement's recitals

include the need to ensure the integrity of ocean ecosystems. However, despite increasing awareness for the ocean-climate nexus, there are still gaps between the scientific understanding and the attention of some governments for ocean-based measures in their Nationally Determined Contributions (NDCs) under the Paris Agreement (Gallo et al. 2017). Moreover, despite the aspirations in Art 4(1)(d) of UNFCCC and the Preamble of the Paris Agreement to address ecosystem issues in the whole ocean, there is no mechanism to address ABNJ because of the State based design of the NDCs.

As noted in the IPCC Special Report on the Ocean and the Cryosphere, restoration of vegetated coastal ecosystems, such as mangroves or tidal marshes (coastal “blue carbon” ecosystems), could provide climate change mitigation through increased carbon uptake and storage of around 0.5% of current global emissions annually (IPCC, 2019). Improved protection and management can reduce carbon emissions from these ecosystems. ABMTs, including marine protected area networks or fisheries closures established by Regional Seas Conventions and RMFOs, have the potential to improve resilience of marine ecosystems and support mitigation of effects from climate change. Together, these actions also have multiple other benefits, such as ensuring continued storm protection from (protected) coral reefs, improving water quality, and benefiting biodiversity and fisheries. In addition, States can, for example, accelerate the development of marine (blue) renewable energy production and green shipping; increase the protection of carbon rich coastal ecosystems, establish networks of marine protected areas, and anticipate and adapt to climate change impacts on fish stocks and coastal communities. With respect to ocean-based climate action, there are different ways for their categorization: For example, Gattuso et al. (2019) distinguish four policy-relevant clusters of action, including (i) decisive ones such as marine renewable energy, (ii) low regret ones such as conservation, restoration and other nature-based measures to restore carbon rich marine and coastal ecosystems, as well as (iii) unproven and (iv) risky ones such as marine geoengineering (e.g., ocean fertilization).

In light of co-benefits for marine biodiversity and coastal livelihoods, the development of nature-based solutions in the coastal and marine environment can be seen as such no regret-option that should be given a high priority (Institute for Advanced Sustainability Studies et al., 2020). However, given the only small contribution of such measures to climate mitigation at the global scale (IPCC, 2019), many experts also argue for an accelerated scaling-up of more decisive ocean-based mitigation efforts such as the development of marine renewable (blue) energy (Hoegh-Guldberg et al., 2019).

Furthermore, climate change is expected to have various indirect effects on coastal livelihoods and maritime sectors. For example modified spatial distribution and abundance of commercially exploited fish stocks have the potential to impact national economies of coastal and fishing States, since quantity and quality of marine fish catch might be redistributed between nations' EEZs and among EEZs and the High Seas. Such environmental changes could also create new governance challenges for States and international governance arrangements such as RFMOs. However, even though climate and fisheries models are improving, the large scale and long time horizon of these have the potential to hamper the development of adequate and timely management responses to address such changes (Institute for Advanced Sustainability Studies et al., 2020).

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Following agreement at the 25th Conference of the Parties of UNFCCC (COP 25), also referred to as the “Blue COP” for its ocean focus, the Chair of the UNFCCC Subsidiary Body for Scientific and Technological Advice (SBSTA) at its fifty-second session in 2021 will hold a dialogue on the ocean and climate change nexus to consider how to strengthen mitigation and adaptation action in this context. The revision of NDCs due at COP 26 (originally scheduled to take place in November 2020, in Glasgow and postponed to 2021 due to the Covid19 pandemic) offers an opportunity for States to adopt more ocean-inclusive mitigation and adaptation strategies (Gattuso et al., 2019). In addition, other related events such as the CBD COP 15 in Kunming (China), the 2020 UN Ocean Conference in Lisbon (Portugal) (both postponed at the time of writing this document), as well as various other regional and sectoral ocean governance processes provide the opportunity to address inseparable threats from climate change, ocean decline, and biodiversity loss together and develop integrated governance approaches.

### ? Proposed questions for the working group discussion

- ▶ In light of the findings of the IPCC Special Report on Oceans and the Cryosphere, what are possible steps to accelerate nature-and other ocean-based solutions for climate action?
- ▶ What specific actions from States (in terms of ocean governance) would be needed to help reduce the causes and impacts of climate change, and how to move towards a supportive ocean governance framework that facilitates decisive action?
- ▶ What are possible options to focus the UNFCCC processes more adequately on the ocean, including its regulatory framework?
- ▶ How could the EU best tackle ocean-based climate mitigation and adaptation actions in the existing International Ocean Governance framework?
- ▶ How could RFMOs, Regional Sea Conventions (RSCs) and other relevant global organisations with mandates on conservation and sustainable use of oceans and seas use their competences best to develop clear coping strategies for the upcoming changes? How could the EU further support their efforts?
- ▶ How could science-policy interfaces help to shape adequate ocean-governance responses taking into account the large scale and long-term changes?

### 4. FUTURE PERSPECTIVES FOR EU ACTION

[It is intended that this section will be further developed based on working group discussions and provide ideas for the EU to take action towards the development of an EU outlook on ocean governance.]

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