THE SUBMISSION TO THE OCEAN AND CLIMATE DIALOGUE (SBSTA 56, 2022)

Le 25 mars 2022

Following the decision 1/C.P26 paragraph 61 (Glasgow Pact), the Environment Integrity Group (EIG) has the honour of submitting the following inputs as a preliminary contribution to the Ocean and Climate Dialogue to be held during the 56th session of the Subsidiary Body for Scientific and Technological Advice (SBSTA), in June 2022 in Bonn, Germany.

The present submission sets out the vision on how the integration of ocean-related considerations into the work and discussions of the UNFCCC could strengthen mitigation and adaptation climate action.

INTRODUCTION AND CONTEXT

Covering more than two thirds of the Earth's surface, the ocean is a complex ecosystem providing essential services for sustaining life on our planet. The ocean is at the heart of the global climate system. It absorbs more than 25% of the CO_2 emissions released each year into the atmosphere by human activities and provides more than half of the oxygen produced on Earth. It further absorbs more than 90% of the heat resulting from variances of the climate, thus limiting atmospheric warming and playing an essential role in climate regulation[1]. Therefore, the good health of the ocean is essential for the sustainable world we must build. The balance of biological and climatic systems depends on its integrity, as well as food security, human well-being, decent jobs, the energy transition and a thriving economy.

Following the publication of the Special Report on the Ocean and the Cryosphere in a Changing Climate[2] (SCROCC) by the Intergovernmental Panel on Climate Change (IPCC) in 2019, the role of coastal and marine ecosystems has been recognised as one of the challenges in the fight against climate change.

The second chapter of the IPCC's Sixth Assessment Report (AR6)[3] on "Impacts, Adaptation and Vulnerability" reinforces the conclusions of the last Special Report. Chapter 3[4] on the ocean, coastal ecosystems and their services, points out the vulnerability of marine ecosystems and calls for urgent action to strengthen adaptation measures.

Despite enhanced interest on its vital functions, the ocean remains largely unexplored. The United Nations Decade of Ocean Science for sustainable development which aims to develop "The Science we Need for the Ocean We Want", was launched in 2021 to bridge this knowledge gap. At the interface between science and politics, this programme will expand scientific knowledge and support decision-making for the implementation of the Sustainable Development Goal 14 on 'Life Below Water'.

[1]OCEAN AND CLIMATE (2019). Policy Recommendations: A healthy ocean, a protected climate. Available here.
[2]IPCC (2019). Special Report on the Ocean and Cryosphere in a Changing climate. Summary for Policymakers. Available here.
[3]IPCC (2022). Sixth Assessment Report. Impacts, Adaptation and Vulnerabilities. Working Group II. Summary for Policymakers. Available here.
[4]IPCC (2022). Chapter 3: Oceans and Coastal Ecosystems and their Services. Sixth Assessment Report. Available here.

The growing scientific evidence show that increasing spatial conservation targets is necessary to face climate change and achieve biodiversity protection objectives jointly. For this purpose, about fifty countries have come together under the High Ambition Coalition for Nature and People. There are now more than 85 countries (including the majority of EIG member states) committed to protecting at least 30% of the world's land and ocean by 2030. Further a high ambition coalition on Biodiversity Beyond National Jurisdiction (BBNJ) has been launched at the One Ocean Summit in Brest, on 11th of February 2022. The coalition gathers parties which are committed, at the highest political level, to achieve an ambitious outcome of the ongoing negotiations on a Treaty of the High Seas[5].

Nature, and especially marine ecosystems, took a centre stage at COP26 of the UNFCCC. The final decision of COP26 formally anchored the ocean within climate negotiations by establishing an annual dialogue under the aegis of SBSTA to enhance the understanding of ocean and climate interactions and strengthen mitigation and adaptation action.

1. General considerations regarding the objectives of the Ocean-Climate Dialogue

(1) Provide the opportunity to take stock of the state of the knowledge and international and national mitigation and adaptation actions for the ocean.

Recommendations for the dialogue:

The ocean must be part of solutions in response to climate change, and climate change must be considered when undertaking ocean planning action.

- ➔ The dialogue should be guided and build on the latest available scientific knowledge, particularly the SCROCC and AR6;
- ➔ The dialogue should emphasise the urgency of reducing GHG emissions to limit the scale of climate change impacts on the ocean and the cryosphere, and the impacts on, and risks to, ecosystems and the livelihoods that depend on them;
- ➔ Ocean protection and nature-based solutions can provide adaptation, resilience and mitigation values, but cannot be considered as a substitute for the urgent deep decarbonation of global economies that is needed to preserve the health of the ocean;
- ➔ The dialogue should identify opportunities for raising ambitions and strengthening mitigation and adaptation action to ensure the integrity of the ocean and coastal ecosystems in the context of climate change;
- ➔ The dialogue should consider the importance of nature, taking into account the integrity, protection and resilience of marine and coastal ecosystems and societies that depend on these natural resources.

(2) Break down the silos with the "ocean" community and explore how to better integrate ocean, climate and biodiversity issues, in particular within the UNFCCC

Recommendations for the dialogue:

[5] https://ec.europa.eu/oceans-and-fisheries/ocean/international-ocean-governance/protecting-ocean-time-action_en

There are various options and possibilities to strengthen synergies between ocean-related work conducted by working groups, instruments and constituted bodies of the UNFCCC and the Paris Agreement.

- ➔ The dialogue should provide the space to understand these activities and explore how to further enhance and strengthen action and synergies in this regard, as well as to discuss what further actions can be taken and/or processes initiated to identify gaps and synergies, and strengthen existing and future work and mandates;
- ➔ The dialogue should provide an update on relevant UNFCCC activities and relevant representatives of bodies and expert groups, including the Nairobi Work Programme and its expert group on Ocean and Coastal Zones, the NDC and NAP processes, the global stocktake, loss and damages, and finance;
- ➔ The dialogue should also integrate non-state actors' efforts, in particular within the Marrakech Partnership for Global Climate Action and the 'ocean and coastal zones' theme;
- ➔ Encourage Parties to the UNFCCC and funding institutions and mechanisms to integrate the ocean-climate-biodiversity nexus into their strategies and plans necessary to the implementation of the Paris Agreement.

(3) Encourage synergies with other Conventions and United Nations bodies

Recommendations for the dialogue:

As part of an integrated approach to ocean, climate and biodiversity issues, it is necessary to strengthen action across the multilateral system and examine the interaction between the UNFCCC and other Conventions and UN bodies.

- ➔ Discussions should consider ways to optimise cooperation, identify gaps and strengthen synergies across the range of multilateral agreements that address the management of the ocean and mitigation and adaptation in order to avoid duplication of effort between the UNFCCC bodies and various UN bodies as well as international treaties which emphasize sustainable use and protection of marine ecosystems (e;g the Ramsar Convention[6])
- ➔ In 2022, the dialogue should explore how to align ambitions of the Paris Agreement with the post-2020 Global Biodiversity Framework objectives, currently under negotiation at the Convention on Biological Diversity and with the Intergovernmental Conference on an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ). For example, the dialogue could include discussions on possible linkages between Conventions' governance bodies, such as secretariats, SBSTAs and SBSTTA, and the COPs. Coordination between national commitments (NDCs and NBSAPs) is the opportunity to align ambitions with objectives that are both climate-friendly and neutral, if not positive for biodiversity, especially marine and coastal biodiversity.[7]

[6] The Ramsar Convention on Wetlands", as its Article 1 mentions that wetlands include areas of marine water depth of which at low tide not exceed 6 m.

[7] Picourt, L., Lecerf, M., Goyet, S., Gaill, F., Cuvelier, R. & Parmentier, R. (2021), Swimming the talk: How to strengthen collaboration and synergies between the Climate and Biodiversity Conventions?, Policy brief, May 2021, OCEAN & CLIMATE PLATFORM, p.1-14. Available here.

2. Considerations regarding the themes to be addressed in the Ocean-Climate Dialogue

- **Mitigation: contribute to the achievement the Paris Agreement objectives (1.5°C)**

Reducing greenhouse gases emissions, and in particular CO_2 emissions, is essential to maintain the good health of marine life, climate functions and ecosystem services provided by the ocean[8]. Limiting GHG emissions is the priority to fight against ocean warming, acidification, deoxygenation, sea level rise, the impacts of extreme weather events and destruction of particularly sensitive ecosystems, such as coral reefs.[9]

(1) Protection and restoration of blue carbon ecosystems:

Seagrass beds, salt marshes and mangroves are the three coastal ecosystems commonly referred to as "blue carbon" ecosystems[10]. They store and sequester large amounts of carbon from the atmosphere and the ocean, thus contributing to mitigating climate change effects[11]. Conversely, when degraded, these ecosystems can release billions of tonnes of CO_2, accelerating global warming[12]. These ecosystems must therefore be protected, conserved and restored[13]. Beyond their mitigation potential, carbon blue ecosystems provide populations with many benefits to adapt and become more resilient to a changing climate[14].
Mangroves, salt marshes and seagrass beds are currently the only marine ecosystems for which there are accepted IPCC methodologies for measuring carbon sequestration, including default emissions factors, which Parties need to factor related emissions information into their GHG emissions inventories. Other forms of marine systems, such as plankton, macroalgae and shelf sea sediments, have been less well researched.

Recommendations for the dialogue:

- ➔ Further investigation regarding their role as sinks and other benefits provided by blue carbon ecosystems is required;
- ➔ Inviting the IPCC, through the mechanisms allowed by its Principles, to review the carbon sequestration capacity of all coastal ecosystems, including tidal flats (mud flats), macroalgal habitat (e.g. kelp forests), and the impact of other anthropogenic activities on them, as well as consider including their impact into a future revision of the 2013 Supplement to the 2009 IPCC Guidelines for Wetlands[15].

[8]IPCC (2019)
[9]OCEAN AND CLIMATE (2019). Ocean et climate change: new challenges. Focus on 5 key themes of the IPCC Special Report on the Ocean and Cryosphere. Available here.
[10]Conservation International (2021). Mitigating climate change through coastal ecosystem management. Available here.
[11]Hilmi N, et al. (2021). The role of blue carbon in climate change mitigation and carbon stock conservation. Front. Clim. Available here.
[12]Serrano O, et al. (2019). Chapter 28. Conservation of Blue Carbon Ecosystems for Climate Mitigation and Adaptation. Coastal Wetlands (Second Edition). An Integrated Ecosystem Approach. Pages 965-996. Available here.
[13]Conservation International (2021). Blue carbon. Integrating Ocean Ecosystems in Global Climate Action. Available here.
[14]Serrano O, et al. (2019).
[15]Because the Ocean (2021). Third Because the Ocean Declaration. A plurilateral initiative in support of multilateral ocean outcomes at COP 26. Available here.

(2) Development of marine renewable energy

Unlike fossil fuels, converting marine energy does not result in CO_2 emissions and does not generate toxic waste[16]. Policies aiming at promoting this "blue energy" are thus concrete and promising mitigation measures[17]. Indeed, the ocean offers numerous opportunities to reduce our dependence on fossil fuels consumption, especially for coastal and island communities. There are many sources of blue energy, ranging from offshore wind turbines to wave energy[18]. The energy of ocean currents, the conversion of ocean thermal energy and the salinity gradient are technologies which are at their infancy, but still have a significant potential that needs to be investigated[19].
Marine renewable energy (MRE), such as offshore wind, tidal and wave energy, has the potential to significantly contribute to the reduction of GHG emissions and limit climate change impacts on the ocean. However, it is crucial to develop marine renewable energy while preserving ecosystems and limiting their impacts (noise pollution, damages to sensitive species, etc), particularly on biodiversity.

Recommendations for the dialogue:

➔ Consideration must be given to how ocean-based renewable energy structures could minimise local adverse impacts and deliver co-benefits for ecosystems, biodiversity and societies.

(3) Decarbonisation of the navigation sector

Accounting for 90% of the international trade in goods[20], the shipping sector is at the heart of our economies. This proportion is expected to increase in the coming years[21]. Shipping currently represents 3% of global anthropogenic CO_2 emissions[22]. The transformation of this sector is therefore required to achieve the Paris Agreement goal of limiting global warming to 1.5°C, while developing resilient supply chains[23]. The greening of port infrastructures and the development of alternative fuels for ship propulsion, optimizing of shipping routes and speed reduction can thus contribute to the decarbonisation of the maritime transport sector[24]. The carbon footprint of fishing vessels, related to fuel consumption and emissions resulting from packaging and cold chain[25], can also be reduced to achieve this goal. The decarbonisation of navigation also calls for the ecological transition of recreational boating by promoting an energy mix and alternative fuels, propulsion solutions and new materials.

Recommendations for the dialogue:

➔ The dialogue should address the importance of reducing emissions from maritime transport, shipping and fisheries, both at the international and national levels;

[16]BPI France (2021). Energies renouvelables : plongée dans l'énergie bleue. Disponible ici.
[17]Because The Ocean (2019). Ocean for Climate. Ocean-related measures in climate strategies. Nationally Determined Contributions, National Adaptation Plans, Adaptation Communications and National Policy Frameworks. Available here.
[18]ibid
[19]ibid
[20]ibid
[21]Beguin Billecocq I, Palmer K, (2022). Transforming shipping for climate, people and nature. Available here.
[22]ibid
[23]Ibid
[24]Because the Ocean (2021). Third Because the Ocean Declaration.
[25]FAO (2019). Because The Ocean NDC Workshops. Available here.

- ➔ The dialogue should highlight best practices by the industry to address climate challenges
- ➔ In this regard, ending fossil fuel subsidies for the maritime transport and fisheries industries is essential.

● Adaptation: strengthen resilience of societies and economies

Coastal regions and Island States are particularly confronted with the destruction of marine ecosystems and the degradation of their services[26]. At the same time, human populations are increasingly vulnerable to sea level rise and extreme weather events, becoming more intense and frequent every year[27]. Adaptation measures to limit climate change impacts are essential to protect the most vulnerable communities and ecosystems[28]. These measures must be adaptive and flexible to respond to specific contexts of territories[29].

(1) Coastal zones adaptation to sea level rise

According to the IPCC, without drastic GHG emissions reductions sea level rise could be up to one metre by 2100 and related extreme events could become increasingly frequent[30]. These phenomena will transform coastlines, already home to a large and increasing part of the world's population[31]. However, the ocean is not only a threat for populations, infrastructures and coastal ecosystems. It also offers multiple adaptation solutions. These solutions can strengthen coastal communities' resilience to climate change impacts, while preserving many services provided by marine ecosystems[32]. They should be extended to all coastal territories, particularly Small Islands Developing States (SIDS) to limit risks and efficiently respond to sea level rise and its consequences.

Recommendations for the dialogue:

- ➔ The dialogue should favour nature-based solutions, in particular the restoration of coastal ecosystems contributing to limiting flooding and reducing the impacts of extreme weather events and sea level rise;
- ➔ Support, as a priority, adaptation measures for the most vulnerable regions, including those threatened by sea level rise: Island States, megacities and densely populated deltas.

(2) Protection and restoration of coral reefs

At the rate at which emissions are increasing, the ocean will no longer be able to continue to absorb as much CO_2 as it currently does[33]. Indeed, the CO_2 absorbed results in the acidification of the ocean, which causes severe disruptions to marine ecosystems[34]. Ocean acidification has consequences on

[26]IPCC (2022). Chapter 3.
[27]ibid
[28]ibid
[29]Sea Ties Declaration (2022). The Mayors and Governors' Forum Cities and their Territories Tackling Sea level rise. Available here.
[30]IPCC (2019)
[31]ibid
[32]Because The Ocean (2019)
[33]OCEAN AND CLIMATE (2019). Ocean and climate change.
[34]ibid

species that make shells or calcium carbonate skeletons "attacked" by acids — including coral[35,36].Up to half of the world's coral reefs have been lost, and if global temperatures rise by 1.5°C, 90% could disappear[37,38]. And yet, corals can protect populations and ecosystems vulnerable to climate change impacts[39]. For example, coral reefs greatly reduce the size of waves during storms or tsunamis, by reducing wave energy by 97% on average[40]. Today, many of the objectives of conservation, restoration and sustainable exploitation of the ocean, coasts and marine resources are not fully achieved[41].

Recommendations for the dialogue:

➔ The conservation of intact ecosystems, and where possible, the natural regeneration of degraded ecosystems should be prioritised. These natural systems help protect the world's coastlines, play a key role in food security and have a great capacity to adapt to changing conditions.

- **Co-benefits: combine mitigation and adaptation objectives**

The notion of co-benefits implies a win-win situation in which several objectives are achieved thanks to the implementation of a single measure, by strengthening synergies between environmental and economic issues[42]. As shown by the IPBES-IPCC co-sponsored report[43], Nature-based Solutions (NbS) enable the protection of the climate and ecosystems, while offering multiple benefits to local communities[44]. Co-benefits are therefore intrinsically linked to Nature-based Solutions which promote co-benefits in terms of mitigating adaptation measures, and vice versa[45,46]. Indeed, Nature is at the heart of sustainable development[47].

(1) Implementing Marine Protected Areas and other effective area-based conservation measures

MPAs and OECMs are adaptation tools designed for marine ecosystems conservation[48]. These adaptation tools provide significant mitigation benefits[49]. Indeed, protecting blue carbon ecosystems allows to, on the one hand, maintain the sequestration and storage processes, and on the other hand, avoid releasing carbon stored in these ecosystems[50]. The designation of protected areas and other areas with conservation measures, which must be based on science, is therefore essential for co-benefits and

[35]Hoegh-Guldberg O, et al. (2017) Coral Reef Ecosystems under Climate Change and Ocean Acidification. Front. Mar. Sci. Available here.
[36]OCEAN AND CLIMATE (2018). Policy brief: Récifs coralliens : des solutions pour aujourd'hui et pour demain. Disponible ici.
[37]IPCC (2019).
[38]Foo S. (2020). Ocean warming threatens coral reefs and soon could make it harder to restore them. The Conservation. Available here.
[39]Ferrario F, et al. (2014). The effectiveness of coral reefs for coastal hazard risk reduction and adaptation. Nature communications. Available here.
[40]ibid
[41]United Nations Environment Programme 2021. Making Peace with Nature: A scientific blueprint to tackle the climate, biodiversity and pollution emergencies. Nairobi. P.22. Available here.
[42]IPCC (2014). Fifth Assessment Report (AR5). p14. Available here.
[43]Portner, H.O. et al. 2021. IPBES-IPCC co-sponsored workshop report on biodiversity and climate change; IPBES and IPCC. DOI:10.5281/zenodo.4782538. Available here.
[44]IPBES-IPCC (2021). Biodiversity and Climate Change. Workshop Report. Available here.
[45]Our Shared Seas (2022). Unpacking Nature-based Solutions and Co-Benefits: A primer. Available here.
[46]IUCN (2016). Nature-based Solutions to address climate change. Available here.
[47]UNEA (2022). Report 5.2 : Nature at the Heart of Sustainable Development. Available here
[48]Claudet J, et al., (2011). Ecological effects of marine protected areas: conservation, restoration, and functioning, in Marine Protected Areas, EBC, Cambridge, 2011.
[49]Rankovic A, Jacquemont J, Claudet J, Lecerf M, Picourt L, (2021). Protecting the ocean, mitigating climate change? State of the evidence and policy recommendations. Policy Brief. Ocean & Climate Platform. p1-6. Available here.
[50]ibid

requires considering the climate criteria[51]. Moreover, the ecological effectiveness of MPAs /OECMs depends to a large extent on their level of protection, with full and high protection being by far the most effective[52] — including to achieve mitigation and adaptation goals.

Recommendations for the dialogue:

- ➔ The dialogue should promote the role of nature-based solutions, such as Marine Protected Areas and other effective area-based conservation measures, in providing climate adaptation, resilience and mitigation, while preserving marine biodiversity and coastal ecosystems' important functions as 'blue carbon' sinks and for climate adaptation[53].

(2) Development of resilient fisheries practices in the face of climate change

Fishing is the major threat to marine biodiversity and ecosystems services. Overexploitation of fishing resources, combined with increasing climate change effects, threaten marine biodiversity and populations depending on these fish stocks for their livelihoods[54]. According to the Food and Agriculture Organisation (FAO), almost 3.3 billion people depend on fishing resources for nutrition[55]. The implementation of an ecosystem-based approach for fisheries management, respectful of marine biodiversity and fair, must help to strengthen the resilience of fisheries activities but also marine ecosystems to tackle climate change impacts and address food security[56]. The adoption of sustainable fisheries practices can also contribute to limiting GHG emissions[57]. For instance, bottom trawling, which disturbs the habitat, leads to the release of carbon from the sediments[58].

Recommendations for the dialogue:

- ➔ The dialogue should identify the importance of ending overfishing and fishing subsidies, avoiding ocean habitat destruction, and protecting food chains and substituting fish feed in the aquaculture sector while respecting livelihoods of coastal communities depending on artisanal fisheries;
- ➔ Including aquatic food production (such as tuna and coastal species) in climate action should therefore become a priority. Marine capture fisheries, inland capture fisheries and aquaculture combined provide a significant portion (53%) of global fish production and thus food security for millions of people. Climate-related strategies and processes that give specific focus to their concerns are required.

[51]ibid
[52]Zupan M, Fragkopoulou E, Claudet J, Erzini K, Horta e Costa B, Gonçalves E (2018). Marine partially protected areas: drivers of ecological effectiveness. Frontiers in Ecology and the Environment 16:381-387. Available here.
[53]Because the Ocean (2021). Third Because the Ocean Declaration.
[54]OCEAN AND CLIMATE (2020). Policy Brief. Impacts of fishing and climate change on life below water: what challenges for the future ? Available here.
[55]FAO (2020). The State of World Fisheries and Aquaculture: Sustainability in Action. Available here.
[56]OCEAN AND CLIMATE (2020)
[57]Because The Ocean (2019)
[58]Roberts C.M., et al. (2017) Marine reserves can mitigate and promote adaptation to climate change. PNAS. Vol. 14. No. 24. Available here.

- **Science: develop scientific knowledge and base decision on science**

Fostering scientific research is key to developing solutions and promoting efficient and relevant decision-making[59]. In this respect, the scientific community has a crucial role to play in the integration of the ocean into climate action, by looking at the role of marine biodiversity in climate regulation and the effects of climate change on marine ecosystems[60]. Cooperation in ocean science, marine technology transfer and innovation will facilitate the sustainable use of the ocean[61]. To achieve this objective, measuring the ocean is essential. Sharing and open access to data must support the work of political decision-makers[62]. In this context, the United Nations Decade of Ocean Science for Sustainable Development (2021-2030) is an opportunity to develop scientific knowledge at the interface between ocean, climate and biodiversity.

(1) Understanding of climate change impacts on the ocean

In addition to multiple forms of pollution, loss of habitats, overexploitation of resources and artificialisation of the coastline, it is climate change that has the greatest impact on the ocean: waters are acidifying, warming and deoxygenating, ice is melting, and sea levels are rising[63]. Ocean acidification is a major challenge that threatens marine biodiversity and compromises its functions as a carbon sink[64]. This phenomenon has negative consequences on ecosystem services, such as fisheries resources[65], on which more than 3 billion people depend[66]. Drastically reducing GHG emissions is an absolute priority to limit ocean acidification[67].

Recommendations for the dialogue:

➔ The dialogue should emphasise the role of science and the importance of enhancing observation and research (including on social, economic and environmental data), and scientific collaboration and expertise at the national, regional and international levels, including with indigenous people and local communities, to address the knowledge gap and support the planning and implementation of solutions.

(2) Understanding the capacity of living organisms to sequester and store carbon

While studies show that the ocean is severely degraded[68], it is increasingly urgent to find scientific solutions enabling us to understand occurring changes and stop the decline of the largest ecosystem of our planet[69]. Scientists studying interactions between ocean, climate and biodiversity seek to understand the role of marine ecosystems in the climate system regulation[70]. They analyse physico-chemical, biological and ecological parameters, as well as the various fields of humanities and social sciences. In this context, the United Nations Decade of Ocean Science is an opportunity to better understand the capacity of living organisms to sequester and store carbon.

[59]OCEAN AND CLIMATE (2019). Policy Recommendations.
[60]ibid
[61]IOC-UNESCO (2017). Global Ocean Science report: the current status of ocean science around the world. Available here.
[62]Tanhua T, et al. (2019). Ocean FAIR Data Services. Front. Mar. Sci. Available here.
[63]OCEAN AND CLIMATE (2019). Ocean et climate change: new challenges.
[64]OCEAN AND CLIMATE (2015). Scientific Sheet: Ocean acidification. Available here.
[65]RAC (2018). Acidification et réchauffement des océans : des dangers qui se démultiplient. Available here.
[66]FAO (2020)
[67]Institut Océanographique (2022). Acidification of the ocean. Fondation Albert 1er, Prince of Monaco. Available here.
[68]IPCC (2019)
[69]Friends of Ocean Action (2022). No Healthy Planet without a Healthy Ocean. Available here.
[70]OCEAN AND CLIMATE (2019). Policy Recommendations.

Recommendations for the dialogue:

- ➔ Further research is needed to better understand the marine environment's capacity to sequester carbon in order to better quantify the mitigation potential of carbon-rich habitats and species beyond those already recognised in the 2013 Supplement to the 2009 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands.

(3) Understanding the impacts of climate change on the polar regions

Climate change is not occurring homogeneously across the globe[71]. There is a polar amplification effect that should be long-lasting[72]. For example, the Arctic is estimated to be warming two to three times more than the global average[73]. In the North, the ice pack and the permafrost react very quickly to global warming (i.e. thaw), unlike the ocean and polar ice caps which react very slowly[74]. According to the IPCC's projections, 25% of the permafrost surface is lost with each additional degree of warming[75]. At present time, with an additional 3°C warming by the end of the century, 75% of the permafrost is expected to be lost[76].

Recommendation for the dialogue:

- ➔ The dialogue should consider banning heavy oil fuel used by vessels in the Arctic, according to the Arctic Commitment recommendation, in the context of climate change.

(4) Applying the precautionary principle to so-called geoengineering strategies

In the face of the scale of global changes, so-called geoengineering strategies explore technological solutions to deal with the effects of climate change[77]. While a few years ago, geoengineering was not of much interest for scientists, it is now receiving international attention. However, the use of these techniques fails to win the unanimous support of the scientific community[78]. The suggested technological options raise many questions as to their effectiveness, environmental, and socio-economic risks and adverse impacts. Moreover, they are subject to ethical and political debates about the frameworks and limits that need to be defined[79]. Currently no report by the UN exists with an in-deepth analysis of these technologies and their governance. In light of these observations and scientific uncertainty, the precautionary principle must guide political decision-makers in order to protect the environment, security and public health[80].

[71]Natura Sciences (2021). Le changement climatique aux pôles nous concerne tous. Disponible ici.
[72]ibid
[73]ibid
[74]ibid
[75]IPCC (2019). Chapter 3: Polar regions. Special Report on the Ocean and Cryosphere in a Changing climate. Available here.
[76]ibid
[77]Bowler M, Palazot S, Allemand D, Copin C, Gascuel D, Le Bris N, Perez T, Sicre M-A, Deprez A, Gaill F. (2021) Géo-ingénierie de l'océan: nouvelle frontière des débats scientifiques, politiques et éthiques dans la lutte contre le changement climatique. Plateforme Océan & Climat. Disponible ici.
[78]ibid
[79]ibid
[80]IISD (2020). The Precautionary Principle. Available here.

Recommendation for the dialogue:

- ➔ Support environmental impact assessment of planned or undertaken activities within the ocean, that may cause significant or harmful changes to the marine environment, and apply the precautionary principle (e.g. large-scale fishing, oil and gas exploration, deep-sea mining, etc.)[81];
- ➔ The dialogue should discuss how to identify, assess and address the potential negative impacts of new and emerging mitigation technologies on ocean and marine ecosystems, such as new types of renewable energy, geoengineering, and carbon capture and storage;
- ➔ It should take into account the multiple sustainability and feasibility constraints of certain technologies (e.g., geoengineering) with regard to their predictability over time, their negative impacts on marine ecosystems and ecosystem functions and structure, and the deviation risk from the trend towards net-zero GHG emissions[82].

- **Blue finance: increase investments and funding for the ocean**

The financial sector still hardly integrates challenges induced by climate change and marine biodiversity erosion[83,84]. One of the financial world's priorities must be to reorient investments towards low-carbon economy to prepare the 2050 countries' low-carbon pathway, as well as to deliver the Sustainable Development Goal targets[85]. In order to maximise synergies between climate and marine biodiversity actions, investments for the climate must have a positive impact - or neutral at least - on biodiversity[86].

(1) The end to subsidies for activities harmful to climate and marine biodiversity

Environmental harmful subsidies encourage unsustainable production or consumption, harming nature by exhausting natural resources and degrading global ecosystems[87]. These subsidies are prevalent in a wide range of sectors, including fisheries which accounts for estimated US$ 50 billion in subsidies per year[88] according to a 2022 study[89]. These sectors account for the vast majority of GHG emissions and severely impact ecosystems[90]. The study shows that governments spent US$ 640 billion per year in support of fossil fuel - the most subsidised sector. In total, the world is spending at least $1.8 trillion every year, equivalent to 2% of global GDP, on subsidies that are driving the destruction of ecosystems and species extinction.

[81]Because the Ocean (2021)
[82]ibid
[83]Finance for Impact (2021). Unsustainable finance in the blue economy: where does the money come from? European Commission. Recommendations Report. Available here.
[84]Sumaila, R (2021). Financing a sustainable ocean economy. Nature. Available here.
[85]OCEAN AND CLIMATE (2019). Policy Recommendations.
[86]Picourt, L., Lecerf, M., Goyet, S., Gaill, F., Cuvelier, R. & Parmentier, R. (2021), Swimming the talk: How to strengthen collaboration and synergies between the Climate and Biodiversity Conventions?, Policy brief, May 2021, OCEAN & CLIMATE PLATFORM, p.1-14. Available here.
[87]Koplow D, Steenblik R, (2022). Protecting Nature by Reforming Environmentally Harmful Subsidies. The Role of Business. Earth Track. Available here.
[88]ibid
[89]ibid
[90]ibid

Recommendation for the dialogue:

- ➔ The dialogue should emphasise the importance of ending harmful subsidies - or other forms of incentives - as a powerful lever for ecological and sustainable transition.

(2) Increase financial resources dedicated to climate and marine biodiversity

Only a massive increase in financial resources[91] mindful of climate and marine biodiversity considerations, will allow us to prepare our economies' low-carbon pathways by 2050 for a just and inclusive transition, and to facilitate the development of marine ecosystems protection and restoration projects[92,93]. The need for access to finance for developing countries and Least Developed Countries, especially Small Island Developing States, must be recognised — taking into account their particular circumstances and vulnerabilities[94].

Recommendation for the dialogue:

- ➔ The dialogue should focus on exploring funding and financing mechanisms, by reorienting existing funds towards issues related to ocean and coastal and marine ecosystems, and developing innovative financing to support adaptation and mitigation measures through innovative approaches and partnerships;
- ➔ The dialogue should identify opportunities provided by new financial tools, especially for scientific research and ocean ecosystems preservation, the integration of ocean-based solutions in the financing of marine and coastal infrastructures, and the development of blue finance strategies;
- ➔ The dialogue should explore how to improve the effectiveness of mechanisms already in place on financial support, technology transfer and capacity-building that specifically aim to enhance the resilience of Small Island Developing States (SIDS) and Least Developed Countries (LDC) to ocean-related climate threats. This includes the necessity to strengthen inclusive socio-institutional responses and institutional support.

(3) The support to investments and private sector mobilisation

Banks, insurances, and other private investors have a key role to play in developing sustainable blue economies and addressing challenges related to climate change and marine biodiversity erosion. If these actors have started to take the measure of these challenges and related opportunities, considerable efforts remain to be made. For instance, it should be noted that SDG 14 “Conserve and sustainably use the oceans, seas and marine resources” is the objective that attracts the least investors[95]. Financial and insurance actors have a particular role to play in assessing and preventing risks to our coasts, such as sea level rise or related extreme events[96]. States should promote the mobilisation of the private sector by creating enabling conditions for investments. For example, governments could strengthen legal frameworks for a blue economy that enhance investors' trust. Moreover, the financial sector needs

[91]WRI (2020). 7 Ways to bridge the Blue Finance Gap. Available here.
[92]OCEAN AND CLIMATE (2019). Policy Recommendations.
[93]Hilmi, N., Chami, R., Sutherland, M.D., Hall-Spencer, J.M., Lebleu, L., Benitez, M.B., and Levin, L.A. (2021). The Role of Blue Carbon in Climate Change Mitigation and Carbon Stock Conservation. Frontiers in Climate 3, 102.
[94]The Ocean Panel (2020). Transformations for a Sustainable Ocean Economy. A vision for Protection, Production and Prosperity. Available here.
[95]OECD (2020). Harnessing the Benefits of Sustainable Ocean Economies for Developing Countries. Available here.
[96]ORRAA (2021). Blue Acceleration: An Ocean of Risks and Opportunities. Available here

precise data on the state of the environment, services provided by nature and models to foresee future evolutions[97].

Recommendation for the dialogue:

- ➔ Strengthening the sources of support for climate change adaptation and mitigation in the ocean, including by enhancing the role of the private sector together with, among others, multilateral development banks, climate funds, bilateral Overseas Development Assistance and other financial institutions.[98]

3. Recommendations for the organisation, structure and format of the Ocean-Climate Dialogue

The Ocean-Climate Dialogue, which was formalised by the final decision of COP26, to be held annually by the SBSTA - the priority is, therefore, to ensure its **relevance and effectiveness** to overcome a real lack of information on the interactions among the ocean, climate and biodiversity, and the mitigation and adaptation solutions to be deployed. The enabling conditions must be established to reflect the importance of the ocean and its ecosystems in the fight against climate change and biodiversity loss. The dialogue and its conclusions must be given serious considerations and fully taken into account within decision-making. The dialogue must identify concrete and achievable outcomes at different time and implementation scales, while promoting an interface and complementarity with the other UNFCCC entities and UN foras. Moreover, the dialogue - its content, discussions and conclusions - must be based on science (including the latest conclusions of the AR6). Similarly, decisions resulting from the dialogue must be informed by the best available scientific knowledge, including relevant knowledge of Indigenous Peoples and local communities.

Participation in the dialogue must be inclusive and balanced. The dialogue should involve all relevant national and international stakeholders, including local communities and indigenous peoples. Parties and non-state actors, including scientific experts, financial experts and non-governmental organisations should be invited to interact with negotiators and political decision-makers. To guarantee that a cross-sectoral approach leads to political decisions, it is essential that as many negotiators as possible, beyond coastal countries and those committed to ocean-related issues, take part in the dialogue. The dialogue should facilitate a comprehensive dialogue on ocean and climate-related ambitions, action plans and good practices for key stakeholders, and the co-benefits and synergies that can be achieved by better integrating marine and maritime issues into climate negotiations. However, the dialogue should not be yet another forum for presentations or discussions without concrete and traceable decisions.

Given the scope of issues to be addressed, it is necessary to dedicate one or two full days to the Ocean-Climate Dialogue during the SBSTA 56 intersessional meeting, in Bonn, in June 2022. The **structure of the dialogue** could be organised around 4 sessions of 1.30 hours per day (2 in the morning and 2 in the afternoon), and should prioritise interactive discussions. A mixed approach that includes expert presentations and discussions as well as interactive breakout sessions could facilitate a dynamic

[97]Monaco Blue Initiative (2021), Conclusion de la 12ème édition. Available here
[98]Because the Ocean (2021)

dialogue. A significant amount of time - at least 40 minutes- should be dedicated to discussions. The dialogue should conclude with a summary plenary session to determine conclusions and next steps.

The dialogue should be held in **a hybrid format**, allowing for a large participation while limiting international travels, and thus GHG emissions.

Following the dialogue, presentations and videos should be made available on the recently launched UNFCCC Ocean page website.

4. Recommendations for taking into account the conclusions of the Ocean-Climate Dialogue

The discussions of the dialogue should be summarised in **an informal report** drafted by the SBSTA Chair and presented during a ministerial segment or a plenary session at SBSTA or COP27. The conclusions of the dialogue should lead to greater efficiency and concrete actions for a better understanding and consideration of the mitigation and adaptation role of the ocean and marine ecosystems to climate change. These conclusions should hence be recognised in the **final decision of COP27** to identify next steps to be undertaken under the UNFCCC and the Paris Agreement.
In this perspective, the dialogue should produce outputs (reports, public communications, policy recommendations, data, etc.) that can be used as input to a range of other mechanisms and processes, including the financial mechanism, the global stocktake and the preparation, updating and implementation of Nationally Determined Contributions and National Adaptation Plans.

Since the dialogue will be held annually, a **follow-up to the conclusions** of each session should be established to ensure continuity in the exchanges and to take stock of the progress made, as well as the remaining gaps to be addressed. A regular evaluation of the effectiveness and impact of the mechanism should be carried out at the end of each dialogue.

Moreover, minutes of the dialogue, in the format of a **short and popularised article**, should be published on the UNFCCC website in order to make the conclusions of the Ocean-Climate Dialogue accessible to the greater public.