



Options for strengthening action on the ocean and coasts under the UNFCCC

June 2022

Coastal mangrove forest in the Bahamas. © Jill Hamilton

An earlier version of this options paper was published in October 2021, prior to COP 26. This is an updated version reflecting the developments under ongoing UNFCCC processes.

Executive Summary

The science is clear and the findings are sobering—anthropogenic climate change is impacting the ocean, and ocean dependent communities, to an unprecedented degree. Sea levels are rising at alarming rates, ocean temperatures are the warmest since records began, marine heatwaves are becoming more frequent and intense, and increased carbon dioxide levels are absorbed by the ocean, causing acidification and harming life below water.¹

The relationship between ocean and climate was specifically referenced in the United Nations' Intergovernmental Panel on Climate Change (IPCC) Working Group II Sixth Assessment Report (AR6) published in February 2022,² which highlighted the current state of knowledge on the importance of coastal and marine ecosystems for climate adaptation and mitigation, and provided solutions to respond to the climate crises. The ocean has a critical role in regulating the Earth's climate, yet it is at jeopardy if we continue to misuse the ocean's carbon sink capacity as a buffer to atmospheric changes. Global cooperation to address and respond to the interlinked challenges of the ocean and climate change is more urgent than ever before. The ocean holds a suite of solutions—both for mitigation and adaptation—if implemented coherently and sustainably.

1 IPCC. (2021). "Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change." https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf.

2 IPCC. (2022). "Climate Change 2022: Impacts, Adaptation and Vulnerability." <https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>.

Despite advancements in recent years, there are still numerous opportunities to strengthen ocean-climate action at the national and international level. At COP 26, Parties requested that the Chair of the Subsidiary Body for Scientific and Technological Advice (SBSTA) hold an annual dialogue, starting at the fifty-sixth session of the SBSTA (June 2022), to strengthen ocean-based action.³ Additionally, Parties invited the relevant work programs and constituted bodies under the UNFCCC to consider how to integrate and strengthen ocean-based action in their existing mandates and work plans. This outcome presents a key opportunity for Parties and partners to transition from ‘making the case for’ to ‘how to deliver’ concrete actions for coastal and marine ecosystems under the UNFCCC.

This options paper summarizes some of the key entry points within existing UNFCCC processes and ongoing negotiations where management actions concerning the ocean and coastal ecosystems can play a productive role in climate action. This paper identifies specific steps and recommendations for advancing ocean action under the UNFCCC, in response to the invitation for “relevant work programs and constituted bodies under the UNFCCC to consider how to integrate and strengthen ocean-based action in their existing mandates and work plans and to report on these activities within the existing reporting processes, as appropriate” (1/CP.26). This paper is meant to accompany the discussions to be held at the recently mandated, annual Ocean and Climate Change dialogue, starting at SB 56 (June 2022), and at COP 27.

UNFCCC PROCESSES AND NEGOTIATIONS RELATED TO THE OCEAN

The following are existing areas within the UNFCCC process and ongoing negotiations where countries may advance efforts to address ocean-climate challenges and opportunities:

Mitigation

- Nationally Determined Contributions (NDCs)

Adaptation

- Nationally Determined Contributions (NDCs)
- National Adaptation Plans (NAPs)
- Nairobi Work Programme (NWP) and its Thematic Expert Group on Oceans
- Adaptation Committee (AC)
- Least Developed Countries Expert Group (LEG)

Loss and Damage

- Warsaw International Mechanism for Loss and Damage (WIM)

Indigenous Peoples Knowledge and Engagement

- Facilitative Working Group of the Local Communities and Indigenous Peoples Platform (LCIPP FWG)

Finance

- Standing Committee on Finance (SCF)
- Green Climate Fund (GCF)
- Global Environment Facility (GEF)
- Adaptation Fund (AF)

Science

- Research and Systematic Observation (RSO)
- Intergovernmental Panel on Climate Change (IPCC)

Technology Mechanism

- Technology Executive Committee (TEC)
- Climate Technology Centre and Network (CTCN)

Capacity Building

- Paris Committee on Capacity-building (PCCB)

Transparency and the Global Stocktake

- Consultative Group of Experts (CGE)
- Biennial transparency reporting (BTR)
- Technical Expert Review (TER)
- Global Stocktake (GST)

³ Glasgow Climate Pact, Decision 1/CP.26: <https://unfccc.int/documents/310475>.

Opportunities for Ocean-based Action

Ocean-based actions provide powerful opportunities, if implemented sustainably, for both adaptation and mitigation, and are mostly untapped. Building off the outcomes from COP 26⁴ and the ‘Ocean and Climate Change dialogue to consider how to strengthen adaptation and mitigation action decision,’ held virtually in December 2020, Parties have the opportunity at the upcoming mid-year UN climate negotiations (SB 56) in June 2022 and COP 27 in November 2022 to come together and agree on pathways to strengthen ocean-climate action under the UNFCCC, as well as call for national level action on the ocean-climate nexus. The sections below outline the most pressing and relevant action items Parties may wish to consider taking in the respective work programmes or existing agenda items.

Mitigation

Mitigation actions based on Nature-based Solutions (NbS)⁵ as well as other human-based activities along the world’s coastline and in the ocean have a critical role in climate mitigation, potentially providing 21% of the total GHG emission reductions per year needed to achieve the 1.5 °C target by 2050.⁶ Ocean-based mitigation solutions include: (i) Ocean-based renewable energy, such as offshore wind, wave and tidal power (ii) Reducing emissions from ocean-based transport, including freight and passenger shipping; (iii) Conservation and restoration of coastal and marine ecosystems, including mangroves, tidal marshes, and seagrass beds; and (iv) Increasing greenhouse gas (GHG) efficiency in fisheries and aquaculture.

The role of coastal and marine ecosystems in mitigation was explicitly included in the Katowice Climate Package⁷ (also known as the “Paris Rulebook”), which encourages countries to utilize the 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands.⁸ This encouragement carries the expectation that countries, depending on their capabilities, will eventually account for GHG emissions and removals from their coastal wetlands, in particular mangroves, tidal marshes and seagrass beds. While applying the 2013 Wetlands Supplement in national GHG accounting is primarily a choice and responsibility of each country, there are additional opportunities and pathways for enhancing ocean-related mitigation actions under the UNFCCC.

4 Glasgow Climate Pact, Decision 1/CP.26 (paragraphs 58, 60 and 61): <https://unfccc.int/documents/310475>.

5 The **Fifth Session of the United Nations Environment Assembly (UNEA-5)** in its ‘[Resolution on Nature-based Solutions for Supporting Sustainable Development](#)’, formally adopted the definition of NbS as ‘actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services and resilience and biodiversity benefits.’

6 Hoegh-Guldberg, O., et al. (2019). “The Ocean as a Solution to Climate Change: Five Opportunities for Action.” World Resources Institute. <http://www.oceanpanel.org/climate>.

7 UNFCCC. (2018). Decision 18/CMA.1. “Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement.” <https://unfccc.int/documents/193408>.

8 IPCC. (2014). “2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands.” https://www.ipcc-nggip.iges.or.jp/public/wetlands/pdf/Wetlands_Supplement_Entire_Report.pdf.

UNFCCC PROCESSES AND NEGOTIATIONS RELATED TO NBS IN COASTAL AND MARINE ECOSYSTEMS AND MITIGATION⁹

The following are actions within the UNFCCC process and ongoing negotiations countries could take that advance NbS in coastal and marine ecosystems for climate mitigation:

Nationally Determined Contributions (NDCs)

- The primary guidance on the information that countries could include in their NDCs was finalized in 2018 under the “Katowice Climate Package.” Should negotiations resume to provide additional guidance for countries on NDCs, this guidance should acknowledge the importance of strong ambition to protect the ocean and encourage the inclusion of coastal and marine ecosystems as part of national mitigation and adaptation goals. [Currently concluded agenda item]
- In the absence of additional NDC guidance, informal guidance on the inclusion of blue carbon ecosystems—such as mangroves, tidal marshes, and seagrasses—in NDCs can aid countries’ NDC updates, such as Guidelines on Enhanced Action: A guide on how countries may include blue carbon in their Nationally Determined Contributions.¹⁰
- Include in future NDCs links to principles and guidelines for incorporating wetland issues into integrated coastal zone management, as contained in the Ramsar Convention Resolution VIII.4, recognizing their values, functions and services, including their role in climate change mitigation and adaptation.

Adaptation

As the impacts of climate change increase in frequency and intensity, adaptation is an urgent priority for ecosystems and populations most vulnerable to climate impacts, including many coastal communities. Strengthening coastal and marine NbS can provide critical adaptation solutions and improve resilience against storm surges, sea level rise, ocean warming and acidification. To accelerate global adaptation efforts, countries need clear strategies for addressing local adaptation needs, accessing finance and capacity building.

Countries presently identify, communicate and address their medium- and long-term adaptation needs and strategies in NAPs and other adaptation communications. An increasing number of countries are focusing on ocean-related matters in their NAPs, such as building coastal flood defenses (including through NbS), designing coastal erosion protection techniques and setting up early warning systems for cyclones. The NAP process is also supported by a number of UNFCCC-based or associated institutions, including the Adaptation Committee (AC), the Least Developed Countries Expert Group (LEG) and the NAP technical working group.

9 This paper does not cover the emission reduction efforts and needs from the shipping sector, as they are addressed under the International Maritime Organisation (IMO).

10 The Blue Carbon Initiative. (2020). “Guidelines on Enhanced Action: A guide on how countries may include blue carbon in their Nationally Determined Contributions.” <https://www.thebluecarboninitiative.org/policy-guidance>.

UNFCCC PROCESSES AND NEGOTIATIONS RELATED TO NBS IN COASTAL AND MARINE ECOSYSTEMS AND ADAPTATION

The following are actions within the UNFCCC process and ongoing negotiations countries could take that advance NbS in coastal and marine ecosystems for climate adaptation:

Nationally Determined Contributions (NDCs)

- Submit an adaptation communication as part of NDCs, as it can maximize cross-cutting climate solutions that deliver both mitigation and adaptation benefits. Adaptation sections of the NDC can also clarify which actions contribute to mitigation co-benefits.
- Should negotiations resume to provide additional guidance for countries on NDCs, this guidance could encourage the inclusion of coastal and marine ecosystems as part of national mitigation and adaptation goals. As of March 2022, only about 30% of parties identified ocean ecosystems as a priority area in their adaptation component of the NDC¹¹. [Currently concluded agenda item]

National Adaptation Plans (NAPs)

- Call for future guidance on the formulation of NAPs to encourage the inclusion of coastal and marine ecosystems as part of national adaptation goals, building on the new Guidelines for Integrating Ecosystem-based Adaptation into National Adaptation Plans. [SBI agenda item 11]
- Developed country Parties, and other interested Parties, could mobilize additional finance for formulating and implementing NAPs, including through dedicated funding windows tailored to coastal and marine adaptation solutions. [SBI agenda items 11 and 14]

Nairobi Work Programme (NWP) and its Thematic Expert Group on the Ocean and Coastal zones

- While the NWP Thematic Expert Group on the Ocean and Coastal zones was established as a timebound body, Parties extended the mandate of this group at the virtual sessions in 2020 and could consider exploring what actions are needed to define a longer-term partnership with Parties, especially LDCs, to better support and ensure continued collaboration on ocean-climate actions. As part of the adaptation knowledge hub, the expert group could serve as a critical resource for the newly established annual Ocean and Climate Dialogue. [SBSTA agenda item 3]
- The work of the NWP on the ocean could be deepened through hosting joint engagements with the RSO/Research Dialogue on the dual function of mangroves, tidal marshes, and seagrass beds for climate change mitigation and adaptation, or other ocean adaptation issues such as coastal infrastructure, fisheries, maritime transport, or ocean energy. [SBSTA agenda item 3]
- The work of the NWP on the ocean could also be strengthened by increased collaborations with other NWP expert groups, especially the one on biodiversity.

Adaptation Committee (AC)

- Should negotiations resume to provide additional guidance to the AC on its flexible workplan (2022-2024), Parties could request the AC prioritize ocean and coastal issues, and include deliverables related to the ocean and coasts, in the workplan. Parties could request the AC to work in collaboration with the NWP's Thematic Expert Group on the Ocean and Coastal zones to utilize its technical expertise by developing briefs on ocean issues, identified by Parties, such as ocean education and, in particular, ocean youth education. [Currently concluded agenda item]

¹¹ UNFCCC. (2022). "Synthesis report for the technical assessment component of the first global stocktake." https://unfccc.int/sites/default/files/resource/GST_SR_23c_30Mar.pdf.

Least Developed Countries Expert Group (LEG)

- Provide technical guidance and support to Least Developed Countries to incorporate coastal and marine NbS approaches into the formulation and implementation of NAPs, including by encouraging the utilization of the Guidelines for Integrating Ecosystem-based Adaptation into National Adaptation Plans. [SBI agenda item 11]
- Identify opportunities to utilize the Technical Supplement to the NAP Technical Guidelines on Coastal Adaptation and NbS for the Implementation of NAPs: Considerations for GCF Proposal Development that was developed in collaboration with the LEG and the NWP Expert Group on Oceans.

Loss and Damage

The concept of loss and damage refers to irreversible harm caused by anthropogenic climate change, such as sea level rise, ocean warming, and ocean acidification. For example, sea-level rise-induced floods are projected to affect 360 million people, causing US\$ 50 trillion in annual losses, equivalent to 4% of global GDP. Additionally, the rise in tropical storms is putting more coastal communities' lives at risk, in addition to having major economic impacts—the cost of storms has reached US\$ 1.4 trillion globally in the past two decades.¹² Countries need to prepare for these events through early warning systems that provide information on impending changes as well as guidance on how to respond appropriately, emergency preparedness, risk assessments, risk insurance facilities and resilience efforts guided by coastal and marine NbS. Integrated coastal zone management that responds to and anticipates negative climate change effects will need to be prioritized as part of national and international climate change planning.

The Warsaw International Mechanism for Loss and Damage (WIM), created in 2013, seeks to strengthen international cooperation and expertise in order to understand and reduce loss and damage associated with the adverse effects of climate change, including extreme weather events and slow-onset events. The Executive Committee of the WIM guides the implementation and the function of the mechanism.

In 2019, Parties agreed to create the Santiago network for “averting, minimizing and addressing loss and damage associated with the adverse effects of climate change,” to catalyze the technical assistance of relevant organizations, bodies, networks and experts, for the implementation of relevant approaches at the local, national and regional level, in developing countries that are particularly vulnerable to the adverse effects of climate change.¹³ The UNFCCC Secretariat has since created a Santiago Network Portal calling for inputs from Parties with respect to their needs for technical assistance.

12 OECD. (2021). “Adapting to a changing climate in the management of coastal zones.” OECD Environment Policy Papers, No. 24. <https://doi.org/10.1787/b21083c5-en>.

13 UNFCCC. (2019). Decision 2/CMA.2. “Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts and its 2019 review.” <https://unfccc.int/documents/210477>.

UNFCCC PROCESSES AND NEGOTIATIONS RELATED TO NBS IN COASTAL AND MARINE ECOSYSTEMS AND LOSS AND DAMAGE

The following are actions within the UNFCCC process and ongoing negotiations countries could take that advance NbS in coastal and marine ecosystems related to Loss and Damage:

- Request that the WIM encourage inputs to the Santiago Network Portal on types and magnitudes of losses (for habitats and communities), damages and resilience measures, with a specific focus on ocean issues, namely marine biodiversity loss, sea-level rise, flood and coastal storm damages and risks, ocean warming and acidification, and relevant resilience strategies that include climate-smart management approaches that are scaled appropriately.
- Through the Executive Committee of the WIM, strengthen the focus on coastal and marine NbS to enhance resilience to climate change impacts on the ocean, including sea-level rise, ocean acidification, coral bleaching and others. [SBSTA agenda item 5; SBI agenda item 12]
- Provide technical guidance and support to Least Developed Countries to incorporate coastal and marine NbS approaches into the formulation and implementation of NAPs, including by encouraging the utilization of the Guidelines for Integrating Ecosystem-based Adaptation into National Adaptation Plans. [SBI agenda item 11]
- Through the Executive Committee of the WIM and in cooperation with the Standing Committee on Finance, improve the understanding of the costs of loss and damage and the scale of finance required to enhance coastal habitat and coastal community resilience. [SBSTA agenda item 5; SBI agenda item 12]
- Expand the Roster of Experts of the Warsaw International Mechanism and its terms of reference¹² to target resilience solutions and include expertise on coastal and marine NbS. [SBSTA agenda item 5; SBI agenda item 12]
- Continue collaborative work with other Convention bodies and develop a continuous cross-body workstream with the AC and the TEC on resilience through coastal and marine NbS, to concentrate knowledge, identify and inform Parties of global best practices, connect negotiators with international experts and develop technology transfer platforms. [SBSTA agenda item 5; SBI agenda item 12]

Indigenous Peoples Knowledge and Engagement

The Paris Agreement explicitly recognizes the rights of Indigenous Peoples and local communities in the context of climate action. Parties agreed to develop a knowledge platform with local communities and Indigenous Peoples (LCIPP) as a first step to formally recognizing their contributions to addressing climate change. Under the UNFCCC, countries agreed to formulate a Facilitative Working Group (FWG) to undertake the work of the LCIPP with representation from countries, Indigenous Peoples and representatives of local communities, upon recognition of the local communities' constituency.

At COP 26, the FWG prepared a three-year workplan for activities between 2022 and 2024, extended the mandate of the FWG with its current composition (seven Indigenous and Parties representatives), and considered the potential addition of three representatives from both local communities and Parties. Throughout the implementation of the second 3-year work plan, Parties could work to ensure that coastal and marine ecosystems and NbS, and Indigenous knowledge pertaining to these ecosystems and solutions, are considered and incorporated.

As part of LCIPP functions, the Platform could be accompanied by an effective program to build the capacities of its constituencies at different levels, which could also be inclusive of coastal and marine ecosystems and NbS. This may help IPLCs to fully participate in ocean-climate-related processes at the international and national levels, including updates of NDCs and NAPs.

UNFCCC PROCESSES AND NEGOTIATIONS RELATED TO NBS IN COASTAL AND MARINE ECOSYSTEMS AND INDIGENOUS PEOPLES

The following are actions within the UNFCCC process and ongoing negotiations countries could take that may advance Indigenous Peoples' knowledge and engagement as it relates to the ocean-climate nexus:

Facilitative Working Group of the Local Communities and Indigenous Peoples Platform (LCIPP FWG)

- Advocate for the inclusion of community-led coastal and marine NbS, and opportunities to strengthen the knowledge, technologies, practices and efforts of local communities and Indigenous Peoples related to ocean-climate action, in ongoing FWG discussions and processes, including the 7th meeting of the FWG, youth roundtable, Indigenous curricula dialogue and training workshop for Parties and stakeholders that will be held at SB 56.
- In discussions to advance the new three-year workplan, ensure that community-led coastal and marine NbS are included, and that any efforts to advance NbS in coastal and marine ecosystems includes full and inclusive participation of all relevant actors and regions, such as traditional knowledge holders, women, Indigenous Peoples and local communities.

Finance

In Paris, countries agreed that developed countries would continue their existing collective finance goal—mobilizing US\$ 100 billion annually from public and private sources—through 2025. Recent estimates demonstrate that while climate finance contributions towards the US\$ 100 billion target is increasing, it still falls short of the global target,¹⁴ with the shortfall estimated at 30% or greater.¹⁵ The disparity is even greater when it comes to nature-based solutions. While the science shows that nature can provide at least 30% of the mitigation needed by 2030,¹⁶ it is only receiving about 3% of global climate finance.¹⁷

To help deliver climate finance for both mitigation and adaptation efforts, the Convention has established a Financial Mechanism, which operates under the guidance of the COP and works through specific international entities, including the Global Environment Facility (GEF), Green Climate Fund (GCF), Special Climate Change Fund (SCCF), Least Developed Countries Fund (LDCF), and Adaptation Fund (AF).

The Financial Mechanism is also supported by the Standing Committee on Finance (SCF), created in 2010, which provides financial resources to developing countries. The SCF Forum that was held in 2021 (part 1) and will be continued in 2022 (part 2) is dedicated to “Financing Nature-based Solutions,” which presents an opportunity to address why funding levels for NbS (including the ocean) still does not match their mitigation and adaptation potential as well as how to increase finance flows.

Both market and non-market mechanisms are important vehicles for driving investment in mitigation actions, including NbS. Article 6 of the Paris Agreement establishes a broad framework for voluntary cooperation among Parties in delivering climate action. It sets out three approaches through which Parties may interact: 1) bilateral or regional cooperative approaches via internationally transferred mitigation outcomes (ITMOs); 2) a centrally governed UNFCCC mechanism to contribute to mitigation and support sustainable development; and 3) non-market approaches.¹⁸ Encouraging the transfer of high-quality emission reductions generated in all sectors, including coastal and marine ecosystems as appropriate, can drive needed flows of finance to climate actions addressing both sources and sinks,

14 Independent Expert Group on Climate Finance. (2020). “Delivering on the \$100 Billion Climate Finance Commitment and Transforming Climate Finance.”

15 Yeo, S. (2019). “Where Climate Cash Is Flowing and Why It’s Not Enough.” *Nature*. www.nature.com/articles/d41586-019-02712-3.

16 Griscom, B. et al. (2019). “National mitigation potential from natural climate solutions in the tropics.” *Phil. Trans. R. soc. B* 375: 20190126. <https://royalsocietypublishing.org/doi/pdf/10.1098/rstb.2019.0126>.

17 Climate Policy Initiative. (2019). “Global Landscape of Climate Finance 2019.” <https://climatepolicyinitiative.org/publication/global-climate-finance-2019/>.

18 UNFCCC. (2015). “Paris Agreement.” [Article 6, Paragraphs 2, 4, and 8, respectively.] https://unfccc.int/sites/default/files/english_paris_agreement.pdf.

and generate opportunities for increased ambition particularly in developing countries. As the guidance for implementing Article 6 was adopted in Glasgow, countries must now turn to the operationalization of Article 6 at the national level.

UNFCCC PROCESSES AND NEGOTIATIONS RELATED TO NBS IN COASTAL AND MARINE ECOSYSTEMS AND FINANCE

The following are actions within the UNFCCC process and ongoing negotiations countries could take that increase finance flows for NbS in coastal and marine ecosystems:

Standing Committee on Finance (SCF)

- Under the SCF Forum on Financing Nature-based Solutions (part 2), further strengthen ocean-climate action by ensuring a strong focus on coastal and marine ecosystems in addition to forests, grasslands, and other ecosystems.
- Request the SCF prepare an Information Note exploring coastal and marine NbS climate finance flows, gaps and opportunities. SCF Forum reports are presented annually to the COP and used to inform the COP guidance for the Green Climate Fund and Global Environment Facility.

Green Climate Fund (GCF)

- In the COP's guidance to the GCF, call for new or elaborated pilot programmes with dedicated funding for "Resilient, Blue Infrastructure," "Blue Carbon and Results-Based Finance" and/or "Resilient Coastal Communities."

Global Environment Facility (GEF)

- In the COP's guidance to the GEF, call for new or elaborated pilot programmes with dedicated funding for "climate-smart coastal zone management," "trans-boundary ocean-climate management" and/or "sustainability and resilience for coastal communities."

Adaptation Fund (AF)

- Call for the continued financing of projects and programmes aimed at strengthening coastal and marine ecosystem resilience, including through NbS. [SBA agenda item 14]

Science

Science is the underpinning of sound policy-making. With the Intergovernmental Panel on Climate Change (IPCC), the UNFCCC has a dedicated body to provide policymakers with regular scientific assessments on climate change, its implications and potential future risks, as well as to put forward adaptation and mitigation options. With both the 2021–2030 United Nations Decade of Ocean Science for Sustainable Development and the 2021–2030 United Nations Decade on Ecosystem Restoration strong allies for increased ocean and climate knowledge and coastal and marine ecosystem restoration have emerged. Additional and continued guidance on these processes, and the funding opportunities under each Decade available for ocean-climate action, would be valuable.

UNFCCC PROCESSES AND NEGOTIATIONS RELATED TO NBS IN COASTAL AND MARINE ECOSYSTEMS AND SCIENCE

The following are existing actions within the UNFCCC process and ongoing negotiations countries could take that may advance coastal and marine ecosystem issues related to science:

Research and Systematic Observation (RSO)

- Continue to propose research questions to SBSTA's dialogue on Research and Systematic Observation on ocean-related mitigation and adaptation questions, such as ocean-related resilience and the role of the Gulf stream and global impacts of its potential collapse.¹⁹ [SBSTA agenda item 8]
- Other topics could include recent scientific research on other potential blue carbon sinks and sources, such as macroalgae production [SBSTA agenda item 8]

Intergovernmental Panel on Climate Change (IPCC)

- Call for the development of practical accounting tools for strengthening ocean-climate action, such as a below-tide area proxy tool (similar to the managed land proxy tool). [UN bodies and intergovernmental organizations that cooperate with the UNFCCC]
- Call for the IPCC to develop and update GHG inventory guidance for coastal wetland ecosystems based on the best available and most recent peer-reviewed science for the next revision of the Wetlands Supplement. The IPCC could also consider including additional coastal ecosystems, such as kelp and other marine and coastal ecosystems currently not included, if and when additional scientific evidence demonstrates the role of these ecosystems for mitigation and satisfactory carbon accounting methodologies are available. This additional guidance would promote the inclusion of such ecosystems into NDCs and NAPs, as well as ensure consistency and comparability among the information provided through the Enhanced Transparency Framework (ETF).²⁰ [UN bodies and intergovernmental organizations that cooperate with the UNFCCC]
- Continue to examine the synergies and trade-offs between biodiversity protection and climate change mitigation and adaptation, as done by the joint IPCC and Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) workshop.²¹ This could include review and assessment of the need for climate resilient infrastructure, including green-gray infrastructure.

Technology Mechanism

To-date, only 20% of the ocean has been mapped and explored, so there is a significant need to better understand the ocean and its systems. As climate impacts accelerate, the ocean will face new pressures, which will require better and more accessible technology to find suitable solutions. The Technology Mechanism (TM), has the mandate to foster collaboration among “climate technology stakeholders.”²² As such, it is one of the few institutionalized platforms within the UNFCCC to facilitate direct interaction between public and private entities. It is composed of two bodies, the Climate Technology Centre and Network (CTCN) and the Technology Executive Committee (TEC). The CTCN seeks to engage national, regional, sectoral and international technology centres, networks, organizations and private sector entities,²³ and the TEC is the policy component of the Technology Mechanism to facilitate enhanced actions of Parties on climate technology development and transfer.

19 Carrington, D. (2021). “Climate crisis: Scientists spot warning signs of Gulf Stream collapse.” The Guardian. <https://www.theguardian.com/environment/2021/aug/05/climate-crisis-scientists-spot-warning-signs-of-gulf-stream-collapse>.

20 Diz, D. et al. (2021). “Blueprint for a Living Planet: Four Principles for Integrated Ocean-Climate Strategies.” WWF International. https://wwfeu.awsassets.panda.org/downloads/wwf_blueprint_for_a_living_planet_2021.pdf.

21 Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. (2021). “Launch of IPBES-IPCC Co-Sponsored Workshop Report on Biodiversity and Climate Change.” <https://ipbes.net/events/launch-ipbes-ipcc-co-sponsored-workshop-report-biodiversity-and-climate-change>.

22 UNFCCC. (2016). “Mapping climate technology development and transfer activities and initiatives under and outside the Convention relevant to the implementation of the Paris Agreement.” <https://unfccc.int/resource/docs/2016/sbsta/eng/inf09.pdf>.

23 UNFCCC. (2021). “About the Climate Technology Centre and Network (CTCN).” <https://www.ctc-n.org/about-ctcn>.

UNFCCC PROCESSES AND NEGOTIATIONS RELATED TO NBS IN COASTAL AND MARINE ECOSYSTEMS AND TECHNOLOGY

The following are existing actions within the UNFCCC process and ongoing negotiations countries could take that may advance coastal and marine ecosystem issues related to the Technology Mechanism:

Technology Executive Committee (TEC)

- In cooperation with the WIM and Adaptation Committee, continue to expand the 2020 policy analysis²⁴ on technologies for averting, minimizing and addressing loss and damage in coastal zones, putting specific emphasis on disaster risk reduction and coastal and marine NbS.
- Build on the recommendations of the joint TEC, NWP, IUCN and FEBA guidance to further strengthen cross-sectoral collaboration and knowledge sharing on integrating NbS and technology for climate adaptation, such as through the establishment of an ad hoc working group on integrated adaptation approaches in coastal and ocean settings [SBI agenda item 13]

Climate Technology Centre and Network (CTCN)

- Design technology needs assessment²⁵ (TNAs) and provide technical expertise on coastal and marine needs, gaps, and coastal resilience solutions. Handbooks and guidance documents could benefit from an update to address ocean issues. [SBI agenda item 13]
- Upscale technical assistance on integrated coastal zone management along with the creation of a dedicated technical assistance window on coastal zone planning within the TNA process. [SBI agenda item 13]

Capacity Building

Accelerating mitigation and adaptation efforts and increasing resilience to climate change will require significant capacities at the local, national and international levels; many countries and stakeholders require dedicated capacity-building support to implement existing and future climate goals. The Paris Committee on Capacity Building (PCCB) addresses current and emerging capacity gaps and needs for fully implementing the Paris Agreement.

UNFCCC PROCESSES AND NEGOTIATIONS RELATED TO NBS IN COASTAL AND MARINE ECOSYSTEMS AND CAPACITY BUILDING

The following are actions within the UNFCCC process and ongoing negotiations countries could take that may advance coastal and marine ecosystem issues related to capacity building:

Paris Committee on Capacity-building (PCCB)

- Include specific sessions on ocean and coastal environments, where appropriate, in capacity-building cycles and support to countries on inventories, NDC accounting and transparency. [SBI agenda item 15]
- Encourage timely and clear communication of short- and long-term financial, capacity building and technology transfer needs for ocean-climate actions via NDCs and other relevant communications to the UNFCCC.²⁶ [SBI agenda item 15]

24 Executive Committee of the Warsaw International Mechanism for Loss and Damage. (2020). "Policy Brief: Technologies for Averting, Minimizing and Addressing Loss and Damage in Coastal Zones." https://unfccc.int/ttclear/misc_/StaticFiles/gnwoerk_static/2020_coastalzones/b9e88f6fea374d8aa5cb44115d201160/3863c9fabdf74ea49710189acbf6907a.pdf.

25 UNFCCC. (2021). "Technology Needs Assessment: Pathways for climate tech implementation." <https://unfccc.int/ttclear/tna>.

26 Diz, D. et al. (2021). "Blueprint for a Living Planet: Four Principles for Integrated Ocean-Climate Strategies." WWF International. https://wwfeu.awsassets.panda.org/downloads/wwf_blueprint_for_a_living_planet_2021.pdf.

Transparency and the Global Stocktake

Transparency underpins the entire Paris Agreement, as accurate monitoring, reporting and verification are essential to understand our progress toward achieving the goals of the Paris Agreement, as well as where improvements are needed. Country commitments under the Paris Agreement are expected to increase in ambition every five years, in line with national circumstances and capabilities. Preceding this step to “ratchet up” ambition is a recurring Global Stocktake—the process through which countries formally assess the mitigation and adaptation progress made to-date as well as the remaining ambition gap to limit global temperature rise to 1.5°C. With the first GST planned for 2023 (and recurring every five years thereafter), Parties have an opportunity to ensure that ocean issues are incorporated into this assessment to reflect the ocean’s contribution to achieving the goals of the Paris Agreement.

UNFCCC PROCESSES AND NEGOTIATIONS RELATED TO NBS IN COASTAL AND MARINE ECOSYSTEMS AND TRANSPARENCY

The following are actions within the UNFCCC process and ongoing negotiations countries could take that advance NbS in coastal and marine ecosystem related to transparency and the Global Stocktake:

Consultative Group of Experts (CGE)

- Revise guidance documents—including the CGE’s Reference Manual for the Enhanced Transparency Framework under the Paris Agreement—to highlight both the relevance and the viability of applying the 2013 Wetlands Supplement (and the 2019 Refinement).

Biennial transparency reporting (BTR)

- In preparation for the BTR, provide options and guidance for reporting relevant ocean and coastal issues. Parties could consider extending their inventory reporting boundaries to the continental shelf edge,^{27, 28} while still remaining within their national boundary and within the scope of the UNFCCC mandate. [SBSTA agenda item 11]
- While not mandatory, Parties should provide ocean-related information on climate change impacts and adaptation in their BTRs. This information in turn will inform the Global Stocktake [SBSTA agenda item 11]

Technical Expert Review (TER)

- Include assessment of countries’ application of the IPCC 2013 Wetlands Supplement as part of the TER under Article 13 of the Paris Agreement. [SBSTA agenda item 11]
- In considering options for conducting voluntary reviews of information related to climate change impacts and adaptation (decision 18/CMA.1, annex, chapter IV), and training courses to facilitate the voluntary reviews, consider ocean and coastal aspects, in terms of the expertise needed for reviews, as well as the modalities [SBSTA agenda item 11]

27 Luisetti, T. et al. (2020). “Climate action requires new accounting guidance and governance frameworks to manage carbon in shelf seas.” *Nat Commun* 11, 4599. <https://doi.org/10.1038/s41467-020-18242-w>.

28 Smeaton C, Hunt CA, Turrell WR and Austin WEN (2021) Marine Sedimentary Carbon Stocks of the United Kingdom’s Exclusive Economic Zone. *Front. Earth Sci.* 9:593324. doi: 10.3389/feart.2021.593324.

Global Stocktake (GST)

- Call for guiding questions relevant to the ocean and coasts to be adopted as part of the GST process in the remaining phases, and for the continued inclusion of coastal and marine NbS in the NDC 5-year increased ambition cycle. [SBSTA/SBI agenda item 7]
- Submit inputs or updates of inputs three months before the Technical Dialogues that occur before the 2023 GST, such as the TD1.2 (August 7, 2022) and TD1.3 (March 5, 2023).

Specific recommendations regarding the GST and ocean-mitigation and adaptation issues are provided in the report: Unpacking the UNFCCC Global Stocktake.²⁹ Further opportunities for the inclusion of the ocean and coastal zones in the GST are identified in the submission: Identifying and accounting for ocean specific topics in the Global Stocktake³⁰

Conclusion

As the above sections illustrate, there are numerous areas within UNFCCC processes, bodies and ongoing negotiations where countries may advance efforts to address ocean-climate challenges and strengthen recognition of the role of coastal and marine NbS in addressing climate change. However, the opportunities outlined in this paper are non-exhaustive.

Parties can use the 2022 Ocean and Climate Change dialogue, and subsequent annual dialogues, to develop and prioritize concrete steps they wish to take to strengthen ocean-climate action and incorporate ocean-climate issues into scientific process under the UNFCCC. In addition to the options presented in this paper, Parties may wish to consider the other options and opportunities discussed at the 2022 Ocean and Climate Change dialogue and the previous 2020 dialogue, including strengthening action across the United Nations, strengthening action at the national level and strengthening finance and other cross-cutting support.

29 Schindler Murray, L. et al. (2021). "Unpacking the UNFCCC Global Stocktake for Ocean-Climate Action." IUCN, Rare, Conservation International, WWF, and Ocean & Climate Platform. https://www.iucn.org/sites/dev/files/content/documents/2021/the_ocean_and_the_unfccc_gst.pdf.

30 Joint submission by the Ocean & Climate Platform on behalf of IUCN, CI, WWF, TNC, and Plymouth Marine Laboratory. "Identifying and accounting for ocean specific topics in the Global Stocktake) https://www4.unfccc.int/sites/ /SubmissionsStaging/Documents/202202281809---GST%20ocean%20submission_final.pdf.

Annex 1

Key Terminology

The below definitions are adapted from the provisional analysis, Coastal and Marine Ecosystems as Nature-based Solutions in New or Updated Nationally Determined Contributions.³¹

NATURE-BASED SOLUTIONS

Nature-based Solutions are actions to protect, sustainably manage, and restore natural and modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits.’ (IUCN, 2020)

NATURE-BASED SOLUTIONS IN COASTAL AND MARINE ECOSYSTEMS

Nature-based Solutions in coastal and marine ecosystems (coastal and marine NbS) are actions that protect, sustainably manage and restore coastal and marine ecosystems in ways that address societal challenges effectively and adaptively.

“Coastal ecosystems” refers to ecosystems at the coastline and extending to the continental shelf edge. “Marine ecosystems” refers to ecosystems beyond the continental shelf edge. The role of coastal wetlands (particularly including mangroves, tidal marshes and seagrass beds) in sequestering and storing “blue” carbon from the atmosphere and the ocean (and hence contributing climate mitigation), is increasingly recognized by governments in nationally determined contributions (NDCs) and greenhouse gas inventories and by non-state-actors who are expanding efforts to conserve and restore these ecosystems. Coastal and marine nature-based mitigation solutions do not include carbon dioxide removal (CDR) options such as geoengineering or bioenergy production with carbon capture and storage (BECCS). Globally, countries and non-state actors are now recognizing the value of numerous coastal and marine ecosystems for their capacity to provide a broad range of (ecosystem-based) adaptation and resilience benefits for communities globally.

OCEAN-BASED CLIMATE SOLUTIONS

Ocean-based climate solutions are the opportunities offered by and related to the global ocean to sustainably contribute to mitigate climate change and/or adapt to its impacts. They include restoring coastal blue carbon ecosystems, developing marine renewable energy, sustainable and climate-smart fisheries and aquaculture, and increasing fuel efficiency in the shipping sector. While coastal and marine NbS aim to achieve multiple socio-economic benefits, the sole objective of ocean-based climate solutions is climate mitigation and adaptation.

BLUE CARBON ECOSYSTEMS

Blue carbon is “the carbon stored in coastal and marine ecosystems.”³² Blue carbon ecosystems (such as mangroves, seagrasses and tidal marshes) sequester and store large quantities of blue carbon. In addition to climate mitigation benefits, these ecosystems provide a multitude of other services such as climate adaptation benefits, fisheries and biodiversity. At this time, only mangroves, seagrass and tidal marsh have IPCC approved guidance (the 2013 Wetlands Supplement) as to the verifiable extent to which ecosystem protection or restoration can contribute to a country’s emission reduction efforts.

31 Lecerf, M., et al. (2021). “Coastal and marine ecosystems as Nature-based Solutions in new or updated Nationally Determined Contributions.” Ocean & Climate Platform, Conservation International, IUCN, GIZ, Rare, The Nature Conservancy and WWF <https://ocean-climate.org/wp-content/uploads/2021/06/coastal-and-marine-ecosystem-2806.pdf>.

32 The Blue Carbon Initiative. (2021). “Guidelines for Blue Carbon and Nationally Determined Contributions.” <https://www.thebluecarboninitiative.org/policy-guidance-specific-topics-in-the-Global-Stocktake> https://www4.unfccc.int/sites/ /SubmissionsStaging/Documents/202202281809---GST%20ocean%20submission_final.pdf.

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Supported by Oceanskind.

