A low-angle, upward-looking photograph of a kelp forest. The kelp stalks are brown and textured, with numerous spherical, golden-brown kelp bladders (floats) attached. The background is a clear, bright blue sky, suggesting a sunny day. The overall composition is dynamic and emphasizes the vertical structure of the kelp forest.

**BLUEPRINT FOR
A LIVING PLANET:**
Four Principles for Integrated
Ocean-Climate Strategies

A whale shark spotter scans the ocean surface for silhouettes in Donsol Bay, Philippines.
© James Morgan / WWF

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Kelp near Santa Catalina Island, California USA. © Rex Lu / WWF

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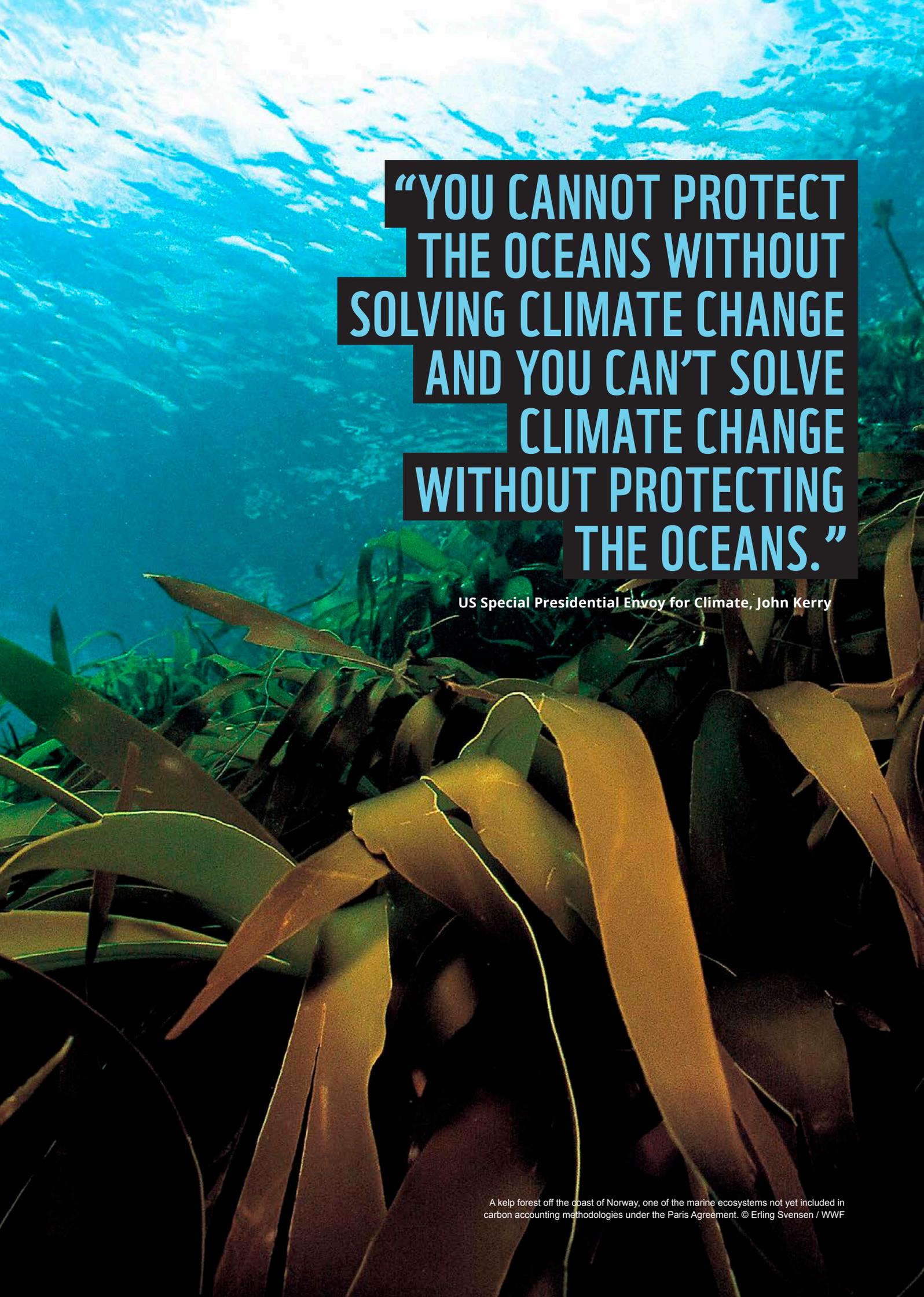
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**“YOU CANNOT PROTECT
THE OCEANS WITHOUT
SOLVING CLIMATE CHANGE
AND YOU CAN’T SOLVE
CLIMATE CHANGE
WITHOUT PROTECTING
THE OCEANS.”**

US Special Presidential Envoy for Climate, John Kerry

EXECUTIVE SUMMARY

The ocean has, for too long, been largely absent from global discussions on climate change. This is beginning to change, with the *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate* and other research clearly demonstrating the urgent need to tackle the crises facing the climate and ocean together.

The world is waking up to the ocean's critical role in mitigation, adaptation and resilience building – from the carbon sequestered in “blue carbon” habitats like mangroves, seagrass beds and kelp forests, to the protection that ecosystems like coral reefs provide against storm surges and other climate change impacts. Yet while the ocean holds myriad solutions, it is suffering from increasing climate change impacts. These impacts create a feedback loop, undermining the ocean's abilities to cope with the onslaught of emissions and mismanagement. Addressing the combined crises requires integrated ocean and climate approaches.

If managed effectively the ocean can help keep our climate in balance, feed a growing population, support economic development, and protect habitats and treasured wildlife. But only a healthy ocean can provide these essential services. We need to protect, maintain and restore the ocean's natural capital to unlock the full value of the goods and services it provides, which benefit all life on planet Earth. By investing in the recovery and protection of our ocean's ecosystems and biodiversity, and by better managing its precious resources, we can rebuild the resilience of the ocean, the communities that depend upon it and our ability to respond to climate change.

This report proposes four principles to guide integrated ocean and climate action to strengthen the mitigation, adaptation and resilience potential of marine and coastal ecosystems – and everything and everyone that depends on them. It offers practical guidance to countries and partners on how to effectively address ocean and climate ambition and action in a synergistic manner. It recommends how to leverage specific mechanisms within and across relevant global frameworks, with a strong focus on the UN Framework Convention on Climate Change (UNFCCC). We propose these principles as a guide for discussions and decisions related to UNFCCC COP26, the Convention on Biological Diversity (CBD) post-2020 global biodiversity framework and the Sustainable Development Goals (SDGs), among others.



Mangrove reforestation project
in Dili, Timor-Leste.
© Jürgen Freund / WWF



Galápagos sea lion swimming near the mangroves in Baronessa Bay, Floreana Island, Galapagos, Ecuador. © Antonio Busiello / WWF-US

THE PRINCIPLES

1. RAISE AMBITION AND URGENTLY DELIVER STRONGER AND SUSTAINED MITIGATION AND ADAPTATION ACTIONS

Raising ambition is about expanding options and opportunities to meet the Paris Agreement's objectives, including efforts to limit temperature rise to no more than 1.5°C. Rejecting the false premise that "ocean solutions" would be created at the expense of "climate solutions", it embraces the potential of fully integrating ocean issues into the work of the UNFCCC and Paris Agreement, and climate considerations into biodiversity and ocean governance processes.

Countries need to increase efforts to capture and strengthen the contributions of coastal and ocean ecosystems to greenhouse-gas mitigation and climate adaptation efforts, which requires protecting and restoring mangroves, saltmarshes, seagrasses and other marine ecosystems that store carbon. This must include strengthening ocean-related measures in their nationally determined contributions and national adaptation plans, as well as within the Enhanced Transparency Framework and the Global Stocktake process. Important mechanisms include expanding the guidelines for national emissions inventories to include a wider range of marine ecosystems; making use of the ecologically or biologically significant marine area criteria under the CBD to identify ecosystems that are important for climate mitigation and adaptation; and incorporating climate issues into marine spatial planning and the design and management of marine protected area networks.

2. MAKE NATURE A KEY PART OF THE SOLUTION

Protecting, restoring and sustainably managing coastal and ocean ecosystems can address both the climate and ocean crises, while providing wider benefits to society. These nature-based solutions should not be viewed as "nice to have" but rather as essential to secure national economies, advance mitigation and adaptation solutions and support the delivery of the SDGs.

Conserving intact ecosystems and restoring degraded coastal ecosystems should be a priority, guided by clear mechanisms for how nature-based solutions linked to the ocean and coasts can be practically implemented, financed and reported upon. This includes ensuring that the role and benefits of blue carbon ecosystems are incorporated into national mitigation and adaptation strategies under the UNFCCC/Paris Agreement, and recognized in the CBD post-2020 global biodiversity framework and other relevant CBD decisions.

3. PUT PEOPLE AT THE CENTRE

The transformative change needed to address the climate and ocean crises cannot happen without the meaningful engagement and empowerment of people, especially those closest to and most dependent on marine and coastal resources. Equity, inclusiveness and transparency should underscore all aspects of decision-making. Countries should adopt multi-stakeholder processes in designing NDCs and the post-2020 global biodiversity framework. They should also ensure inclusive participation and protection of human rights in climate, ocean and biodiversity governance structures and implementation mechanisms, particularly with respect to indigenous peoples and coastal communities.

4. JOIN UP THE CLIMATE AND OCEAN FINANCE AGENDAS

Climate finance still falls far short of what is needed to keep global warming within 1.5°C – and only a tiny fraction of this goes to nature-positive ocean-climate solutions. Enhanced coordination across UNFCCC, CBD and SDG financing mechanisms is needed to leverage additional funding for ocean sustainability and nature-based solutions from public, private and blended sources of finance. Finance institutions need to recognize the value of natural ocean and coastal infrastructure and the risks of business-as-usual approaches, while public sector finance should prioritize de-risking and enabling investment in ocean-climate action. Financial institutions should adopt the Sustainable Blue Economy Finance Principles to create clarity and consensus on what sustainability means in ocean financing.



**ADDRESSING THE
COMBINED OCEAN AND
CLIMATE CRISES REQUIRES
INTEGRATED SOLUTIONS**

THE CONTEXT

The science is clear.¹ We are facing a climate crisis that is also an ocean crisis. As the Intergovernmental Panel on Climate Change (IPCC) *Special Report on the Ocean and Cryosphere in a Changing Climate* has highlighted, the ocean holds many of the solutions required to respond to climate change, yet it is suffering from increasing climate change impacts. These impacts create a feedback loop, which negatively affects the ocean's abilities to cope with the onslaught of emissions and mismanagement. Addressing the combined crises requires integrated ocean and climate approaches and solutions.

Fortunately, the world is waking up to the ocean's critical role in mitigation, adaptation and resilience building.² Seagrass, for example, per hectare can bury carbon more effectively than tropical rainforests,³ while providing nursery habitats to a fifth of the world's major fisheries.⁴ Seabed sediments can store more carbon than peatland ecosystems,⁵ and mangroves can store 3-5 times as much carbon as tropical rainforests.⁶ In addition, ecosystems such as mangroves and coral reefs provide protection from the effects of climate change by attenuating wave energy and storm surges and stabilizing shorelines from erosion. Altogether, ecosystem services associated with mangroves worldwide amount to an estimated economic value of at least US\$1.6 billion per year.⁷

While there is good data on the amount of carbon stored by coastal ecosystems, there is considerable scientific uncertainty in quantifying carbon emissions to the atmosphere from submerged marine sediments across spatial scales. However, scientific evidence confirms that sediment disturbance (e.g. from fishing gear and seabed mining) can lead to chemical and biological alteration of the natural cycles that drive carbon sequestration and storage. These changes can reduce the capacity of marine ecosystems to sequester and store CO₂.⁸

In light of these scientific uncertainties and potential policy opportunities, applying the precautionary approach in the management of these ecosystems is imperative – to address not only the environmental pillar of sustainable development, but also the social, cultural and economic pillars. Seagrass, mangroves, coral reefs and several other coastal habitat types provide multiple goods and services to coastal communities – from food, building and cooking materials, to sanitation and coastal protection, to cultural and educational value and traditional knowledge.⁹ Integrated solutions are needed so that both terrestrial and marine ecosystems can continue to perform the ecological functions that underpin life on Earth and provide goods and services for the communities that depend on them.



Polar bear in blue ice. Svalbard, Spitsbergen, Norway.
© Wim van Passel / WWF

Significant greenhouse gas (GHG) emissions reductions are urgently needed to safeguard these ecological functions and ecosystem services. In addition, there is a need for conservation and sustainable use of marine and coastal ecosystems to ensure ocean resilience.¹⁰ If managed effectively the ocean can contribute greatly to keep our climate in balance, feed a growing population, support economic development, and protect habitats and treasured wildlife. But only a *healthy* ocean can provide these essential services. And, as the IPCC Ocean and Cryosphere report made clear, climate change is adding pressures from temperature rise to ocean acidification while exacerbating existing pressures such as marine pollution and overexploitation, with the impacts being disproportionately faced by the most vulnerable communities. We need to protect, maintain and restore the ocean's natural capital to unlock the full value of the goods and services it provides, including sequestering emissions and regulating the climate.

By investing in the recovery and protection of our ocean, its ecosystems and biodiversity, and by better managing its precious resources, we can rebuild the resilience of the ocean, the communities that depend upon it and our ability to respond to climate change. However, clear mechanisms and guidance are needed for how such nature-based solutions linked to coasts and ocean, including “blue carbon” (see figure 1), can be practically implemented, financed and reported upon.

Given the importance of ocean health to human well-being and to humanity's ability to respond to climate change, the ocean-climate nexus must be central to discussions about creating the solutions that will allow people and nature to thrive. Integrating and coordinating ocean and climate issues within and across relevant global frameworks, including the UNFCCC, will strengthen the mitigation, adaptation and resilience potential of marine and coastal ecosystems – and everything and everyone that depends on them.

The IPCC Ocean and Cryosphere report provides a strong scientific basis for a more systematic and in-depth approach to addressing the role of the ocean in combating climate change. Yet to date, the irreversible impacts on marine ecosystems from climate change and the ocean's contribution to climate responses have received relatively little attention in global frameworks, including the UNFCCC. Still, there has been some encouraging progress upon which to build. UNFCCC COP25 in 2019, the so-called “Blue COP” because of its strong focus on ocean issues, requested the Chair of the Subsidiary Body for Scientific and Technological Advice to convene a dialogue on the ocean and climate change to consider how to strengthen mitigation and adaptation

action. This was a critical first step in mainstreaming the ocean in UNFCCC processes, and engaging in the relevant science to develop responses.

To secure global commitment to strengthen the mitigation, adaptation and resilience potential of the ocean, WWF joined with parties and non-party stakeholders to submit input to the Ocean and Climate Dialogue, held on 2-3 December 2020.¹¹ In this submission, WWF proposed that parties to the Paris Agreement consider four integrated themes, guided by four overarching principles, with the aim to recommend specific mechanisms for consideration by UNFCCC COP26 to integrate the ocean into the global climate agenda.

The themes and principles are detailed in the following section. Simply put, they are intended to sharpen and clarify our engagement in and across the myriad mechanisms the world has undertaken to try to safeguard and fairly share the planet's resources. From the UNFCCC and the Paris Agreement, to the CBD, the Ramsar Convention and the Convention on Migratory Species of Wild Animals, the UN Convention on the Law of the Sea (UNCLOS) to the 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDGs) – the international community has, collectively, committed again and again to cooperate for the good of all.

The upcoming Conference of the Parties to the UNFCCC and the Paris Agreement (COP26), as well as CBD COP15 and other important processes, such as negotiations for a new treaty on marine biodiversity beyond national jurisdiction, provide a unique opportunity for embracing the holistic solutions needed for a sustainable and resilient future. Including strong provisions for ocean health that take into account climate change in each of these different regimes and processes makes them more effective on all fronts.

Many opportunities exist to strengthen links and synergies¹² between UN processes, and to deliver stronger and sustained mitigation and adaptation action outside the UNFCCC processes. These include through UNCLOS, which is regarded as a “constitution for the oceans”¹³ and recognized by most members of the UN General Assembly as a legal framework for regulating all activities at sea.¹⁴ UNCLOS provisions on the prevention and control of marine pollution cover all sources, including atmospheric and land-based sources, and should be interpreted in light of the absolute obligation to protect and preserve the marine environment.¹⁵

Integrated solutions across different international conventions and policymaking processes are urgently needed to address complex challenges posed by the interdependent climate and biodiversity crises. The ocean has a central role within them.

THE BENEFITS OF BLUE CARBON ECOSYSTEMS¹⁶



CARBON SEQUESTRATION

Rates of carbon sequestration per hectare in blue carbon habitats can be up to 10 times greater than those of terrestrial ecosystems.



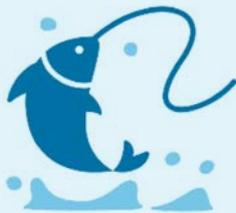
BUFFERING OCEAN ACIDIFICATION

Ocean acidity has increased by 30% since the beginning of the Industrial Revolution. Healthy blue carbon habitats enhance the ocean's resilience to its harmful effects.



COASTAL PROTECTION

Blue carbon habitats help provide protection from the impacts of climate change, such as extreme weather events and rising sea levels.



BOOSTING FISHERIES PRODUCTIVITY

Blue carbon habitats are vital for food security. Almost 80% of global fish catches are directly or indirectly dependent on mangroves.



MEETING GLOBAL FOOD TARGETS

Seaweed production helps meet world food targets and offers a path to alternative crops and fuels that do not require arable land.



BENEFITING BIODIVERSITY

Healthy blue carbon ecosystems provide critical habitat for marine and terrestrial species. Seagrass harbours 40 times as many species as the sea floor.



WATER FILTRATION

Blue carbon habitats are effective water purifiers, helping to filter out excess nutrients and sediment that threaten water quality and ecosystem health.



JOB CREATION

Blue carbon habitats support the livelihoods of coastal communities by creating opportunities for tourism and recreation.



ECONOMIC BENEFITS

Blue carbon habitats hold great potential for building the socio-economic resilience of vulnerable coastal communities.



Coral reefs help to protect coasts against the impacts of climate change, such as storms and other extreme weather. Great Sea Reef, Fiji. © Tom Vierus / WWF-US

THE PRINCIPLES

WWF HAS PROPOSED FOUR OVERARCHING PRINCIPLES TO GUIDE EFFECTIVE INTEGRATED OCEAN AND CLIMATE ACTION:



1. Raise ambition and urgently deliver stronger and sustained mitigation and adaptation actions



2. Make nature a key part of the solution



3. Put people at the centre



4. Join up the climate and ocean finance agendas

While principles 1-3 are clearly linked to international governance processes, principle 4 provides an enabling context for how these might be financed. These principles were originally intended to inform the development and implementation of specific mechanisms within the UNFCCC/Paris Agreement. This report expands on these principles by also applying them to other treaties, with an emphasis on the CBD. In doing so, the principles serve as a frame for policy coherence that would enable the adoption and implementation of solutions that maximize the benefits provided by marine ecosystems for sustainable development and the wider society. They aim to ensure the best available science and traditional knowledge is applied to decision-making, while ensuring that the financing needs of these interventions are understood and addressed.

Under these principles, WWF has proposed four integrated themes to help identify appropriate mechanisms within the UNFCCC to integrate the ocean into the global climate agenda:

1. Capture and strengthen the contribution of coastal and ocean ecosystems to GHG mitigation efforts (*Raise ambition and Make nature a key part of the solution*).
2. Capture and strengthen the contribution of coastal and marine ecosystem protection, restoration and

management for climate adaptation, resilience and related planning efforts (*Make nature a key part of the solution*).

3. Strengthen the resilience of coastal and marine ecosystems and dependent societies and economies (*Make nature a key part of the solution and Put people at the centre*).
4. Increase the capacity of coastal developing countries to respond to ocean-related effects of climate change by leveraging support for finance, capacity building, inclusive planning, education and technology transfer (*Put people at the centre and Join up the climate and ocean finance agendas*).

WWF proposes, among other things, that:

- UNFCCC COP26 agrees on a process or programme that takes forward this integrated agenda.
- CBD COP15 meaningfully includes the ocean-climate interface into its post-2020 global biodiversity framework.
- The SDGs are implemented in a holistic manner that accounts for the ocean-climate interface.

This paper further elaborates on these principles within the wider context of relevant governance processes.

A large offshore wind turbine stands in the Irish Sea under a dramatic, sunset-colored sky. The turbine's three blades are spread out, and its tower is supported by a yellow jacket structure. In the lower-left corner, a service vessel is visible on the water. The overall scene conveys a sense of scale and renewable energy.

PRINCIPLE 1.
RAISE AMBITION AND
URGENTLY DELIVER
STRONGER AND
SUSTAINED MITIGATION
AND ADAPTATION ACTIONS

Walney Wind Farm in the Irish Sea, one of the largest offshore renewable energy projects in the world. © Global Warming Images / WWF

1. RAISE AMBITION AND URGENTLY DELIVER STRONGER AND SUSTAINED MITIGATION AND ADAPTATION ACTIONS

Principle 1 concerns the need for raised ambition to deliver stronger and sustained mitigation and adaptation actions without delay to meet the Paris Agreement’s objectives, including efforts to limit temperature rise to no more than 1.5°C. This starts with maximizing the opportunities to integrate ocean issues into the work of the UNFCCC and Paris Agreement – and climate considerations into biodiversity and ocean governance processes.

It asks parties to capture and strengthen the contribution of coastal and ocean ecosystems to GHG mitigation efforts. The ocean provides enormous potential for scaling new solutions to reduce GHG emissions, such as marine renewable energy and large-scale open-ocean macroalgae farms. Ocean-based renewable energy can play an important role in transitioning the global energy system to align with the Paris Agreement, yet there is important work to be done to ensure that it can be designed and implemented so as not to further undermine ocean health and resilience. Marine spatial planning (MSP) can serve as a tool for selecting the best marine areas for such developments in a manner that minimizes any potential adverse impacts on marine ecosystems and species. MSP can also contribute to measures to avoid or mitigate impacts on blue carbon habitats.

The UN General Assembly declaration on SDG 14 (Conserve and sustainably use the oceans, seas and marine resources for sustainable development) supports MSP as a tool for applying precautionary and ecosystem approaches “to enhance ocean resilience and better conserve

and sustainably use marine biodiversity.”¹⁷ MSP can therefore be an important framework for proposed solutions to climate change, helping to manage and reduce impacts on blue carbon habitats that can lower or negate their potential to sequester and store carbon and contribute to adaptation and resilience. Furthermore, both the CBD and the Convention on Migratory Species have developed detailed environmental impact assessment (EIA) and strategic environmental assessment (SEA) guidance that can be brought to bear to minimize adverse impacts on marine biodiversity (including “blue carbon” assemblages), with the latter being particularly important to assess cumulative impacts.¹⁸



A fisherwoman in a village set among mangroves in the western coastal region of Madagascar.
© Justin Jin / WWF-France

Importantly, increased ambition must also be reflected in marine ecosystem protection, sustainable management for adaptation and related planning efforts, as well as restoration. This is intrinsically linked to Principle 2 on making nature part of the solution.

Under the UNFCCC/Paris Agreement framework, some of the avenues under which synergies can be better explored include nationally determined contributions (NDCs); adaptation planning pledges such as adaptation communications and national adaptation plans (NAPs); the Enhanced Transparency Framework (ETF); and the Global Stocktake process.

INCLUDING OCEAN-RELATED CONSERVATION MEASURES INTO NDCS

Paris Agreement parties have the obligation to adopt measures to conserve and enhance coastal and marine sinks and reservoirs of GHGs, as well as adaptation measures to address adverse impacts of climate change and foster climate resilience.¹⁹ Article 3 of the Paris Agreement identifies NDCs as the main means to meet these obligations. The NDCs are not legally binding per se, but they are “subject to binding procedural requirements and to normative expectations of progression and highest possible ambition”.²⁰ This progression in ambition should be reflected in the successive NDCs submitted every five years. Even though they are not legally binding, once parties have defined their NDC, it is commonly understood to provide a benchmark for their progress and ambition on climate change.

An explicit opportunity to include ocean-related conservation and management measures in NDCs emerged during UNFCCC COP22 in Marrakech, which adopted the second Ocean Declaration (see figure 2 on the evolution of ocean considerations more explicitly into the UNFCCC processes). This encouraged parties to submit NDCs “that promote, as appropriate, ambitious climate action in order to minimize the adverse effects of climate change in the ocean and to contribute to its protection and conservation”.²¹

A 2017 analysis of 161 NDCs found that 70% made reference to the ocean, with the most prominent concerns being climate impacts on coastal areas (95 NDCs), followed by ocean temperature (77 NDCs), fisheries (72 NDCs), and marine ecosystems more broadly (62 NDCs).²² Only eight NDCs included quantified measures for capturing the value of marine ecosystems in carbon sequestration and storage.²³

Quantification is an important consideration for parties in their next cycle of NDCs. Quantifiable information presented in NDCs should also be accompanied by base year information, timeframes for implementation of measures, scope and coverage (sectors, categories, activities, sources and sinks, pools and gases).²⁴ For GHG inventories, parties must apply the 2006 IPCC guidelines,²⁵ and are encouraged to apply the 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands (IPCC Wetlands Supplement).²⁶ As of 31 December 2020, 48 new or updated NDCs have been submitted to the UNFCCC/Paris Agreement secretariat.²⁷ Only a few parties referred to the standard methods and procedures contained in the IPCC Wetlands Supplement.²⁸ Some parties described mitigation co-benefits from adaptation action regarding coastal ecosystems, such as planting mangroves and seagrass.²⁹

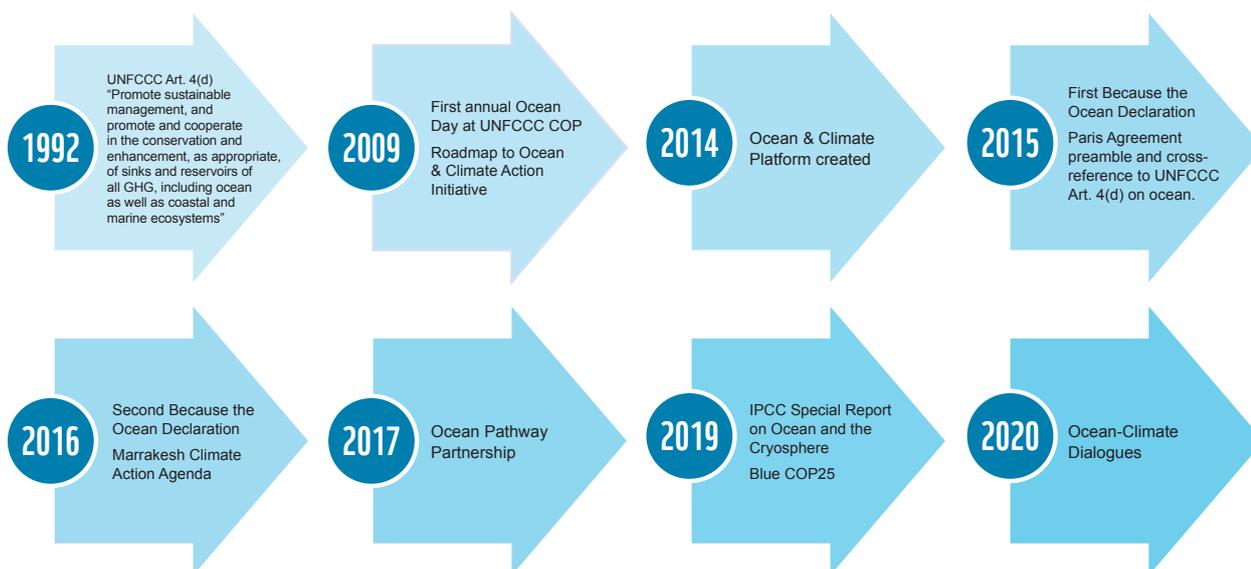


Figure 2: Historical overview of ocean in UNFCCC processes. Adapted from *The Because the Ocean Initiative Secretariat. 2019. Ocean for Climate: Ocean-related Measures in Climate Strategies.*

BOX 1: ECOLOGICALLY OR BIOLOGICALLY SIGNIFICANT MARINE AREAS (EBSAS)

EBSAs are special areas that serve important purposes to support the healthy functioning of the ocean and the many services that it provides. Seven scientific criteria are used to describe marine areas of ecological or biological significance, developed through scientific and technical workshops under the CBD:

- Uniqueness or rarity
- Special importance for life history stages of species
- Importance for threatened, endangered or declining species and/or habitats
- Vulnerability, fragility, sensitivity, slow recovery

- Biological productivity
- Biological diversity
- Naturalness (CBD decision IX/20 (2008))

The EBSA descriptions and EBSA maps provide important scientific information about marine areas that are important for biodiversity and ecosystem services (including those provided by blue carbon ecosystems). Such information is crucial for competent organizations to identify appropriate conservation and sustainable management measures, and can assist with enhanced cooperation among these organizations for integrated management.

A map of blue carbon ecosystems has been suggested as a key tool for inventory reporting³⁰ and as a means to identify and implement coordinated conservation and management measures in response to obligations and commitments under multiple legal and policy instruments. A number of processes could feed into this mapping exercise, including the ecologically or biologically significant marine area (EBSA) descriptions under the CBD,³¹ which implicitly³² incorporate a wide range of blue carbon ecosystems in their descriptions. While the EBSA criteria do not explicitly include climate refugia³³ or blue carbon ecosystems, some of these criteria are particularly relevant for the identification of such habitats in future EBSA description revisions. These include areas that are unique or rare, of special importance for life-history stages of species (areas required for a population to survive and thrive), importance for threatened, endangered or declining species and/or habitats, biological productivity (important role in fuelling ecosystems, growth and reproduction rates of organisms), and biological diversity (areas important for evolution and maintaining resilience of marine species and ecosystems).³⁴ The Western South Pacific High Aragonite Saturation State Zone is an example of an EBSA that included climate refugia as a justification for its recognition.³⁵ The justification was based on the site's resilience to ocean acidification, resulting in a high score against the EBSA first criterion (oceanographic uniqueness or rarity).³⁶

As well as EBSAs, marine protected areas (MPAs), MPA networks³⁷ (see box 2 below) and respective management plans and monitoring systems could incorporate and explicitly

identify blue carbon habitats and refugia. This would support coherent marine conservation and management measures and deliver co-benefits from mitigation, adaptation and resilience.

In addition to quantifiable information, qualitative information would complement NDCs³⁸ and could be used to better link overlapping actions across conventions. This could be done by linking specific proposed measures to guidelines (even if voluntary) developed under other conventions, such as the CBD.

NATIONAL ADAPTATION PLANS (NAPS)

Established under the Cancun Adaptation Framework, NAPs are a tool for countries to achieve their long-term climate resilience pathways. The process enables countries to identify medium- and long-term adaptation needs, and to develop and implement the strategies to address these needs. It is a continuous, progressive and iterative process.³⁹

Article 7(1) of the Paris Agreement established an adaptation goal, aimed at enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change. It also aims to contribute to sustainable development and ensure an adequate adaptation response in relation to the temperature goal under Article 2. Incorporating ocean-related measures, including those to protect ecosystems that are important for achieving this adaptation goal (e.g. coral reefs),⁴⁰ into NAPs is consistent with this aim.

These ecosystems provide a range of adaptation benefits, including increased protection against storm surges, flooding, sea-level rise and coastal erosion, and enhanced food security, among others.⁴¹ The IPCC has recommended using natural ecosystems such as mangroves and tropical coral reefs to protect human coastal communities.⁴²

Adaptation measures under the Paris Agreement are to be country-driven, gender responsive, participatory and fully transparent.⁴³ These measures should consider vulnerable groups, communities and ecosystems, and be guided by the best available science and local, traditional and indigenous knowledge.⁴⁴ Adaptation should also be integrated into relevant socio-economic and environmental policies and actions.⁴⁵

The Paris Agreement recognizes the need for international cooperation on adaptation efforts, taking into account the needs of developing country parties, especially those that are particularly vulnerable to climate change effects.⁴⁶ Each country should engage in adaptation planning and action, including developing or enhancing plans, policies and/or contributions, which may include the process of formulating and implementing NAPs.⁴⁷

Adaptation provisions under the Paris Agreement are less precise than the mitigation measures and most are recommendations rather than being legally binding.⁴⁸ The UNFCCC recommends that adaptation commitments and efforts should be incorporated into the NDCs, in addition to NAPs, to achieve the same progressive ambition and maximize the benefits. This includes marine and coastal ecosystem-based adaptation (see box 3 below).⁴⁹ The financing of these interventions to ensure their effective delivery and scaling up is critical (see Principle 4).

ENHANCED TRANSPARENCY FRAMEWORK (ETF)

Article 13 of the Paris Agreement established the ETF to provide clarity on support provided and received by individual parties on climate actions regarding their NDCs (Art. 4), adaptation efforts, including through NAPs (Art. 7), resource mobilization and finance (Art. 9), technology development and transfer framework (Art. 10) and capacity building (Art. 11) to inform the Global Stocktake process.⁵⁰

Under the 2018 reporting requirements, all parties must use the 2006 IPCC Guidelines for National Greenhouse Gas Inventories and any subsequent version or refinement (such as the 2019 refinement).⁵¹ The use of the IPCC Wetlands Supplement is only “encouraged”.⁵²

Ideally both should be required. Capacity building and resource mobilization for developing countries to use the IPCC Wetlands Supplement should be a priority action if coastal blue carbon ecosystems (mangroves, seagrasses and saltmarshes) are to be included by all. Parties should also request the IPCC to expand the scope of its methodologies to other blue carbon ecosystems, such as macroalgae (e.g. kelp forest); maerl, mussel, flame shell, brittlestar and bryozoan beds; biogenic reefs; and different types of sediments, among others.⁵³ This will ensure that information provided by parties under the ETF is consistent and comparable, as stipulated under Article 4 of the Paris Agreement.⁵⁴

Given the role of the ETF as a main avenue for reporting and reviewing GHG accounting of emissions and sinks,⁵⁵ this process could play an important role in reviewing parties’ blue carbon accounting, as well as the implementation of mitigation and adaptation measures more broadly.

GLOBAL STOCKTAKE PROCESS

The Global Stocktake process under the Paris Agreement is meant to assess collective progress toward the Paris Agreement’s long-term goals, including the NDCs’ level of ambition.⁵⁶ The process is supposed to start in 2023, and be revisited every five years thereafter.⁵⁷ The outcomes will serve to inform parties in updating and enhancing their actions in the context of their NDCs, and enhance international cooperation on climate action.⁵⁸

The second Because the Ocean Declaration encourages UNFCCC parties to include the ocean in the Global Stocktake, including by considering “mitigation and adaptation to climate impacts on ecosystems, livelihoods and economic activities that cannot be sustainable without a climate-resilient and healthy ocean.”⁵⁹ The 2019 Because the Ocean report recommends the incorporation of ocean-related indicators under the Global Stocktake as a means to inform respective policy reform, and ensure ocean considerations under the NDCs.⁶⁰

Opportunities exist within the Paris Agreement processes, implementation and reporting mechanisms to integrate ocean solutions into the climate regime. As a key implementation mechanism of the Paris Agreement, the NDCs provide a unique opportunity for integrating obligations, standards and commitments under other relevant international instruments (e.g. CBD, UNCLOS, SDGs, etc.).



BOX 2: CLIMATE-SMART MPA NETWORKS CAN CONTRIBUTE TO CLIMATE ADAPTATION, MITIGATION AND INCREASED ECOSYSTEM RESILIENCE, WHILE ALSO PROTECTING MARINE BIODIVERSITY.

Climate-smart MPA network design should include the following steps⁵⁷ and elements:

- Select climate-specific objectives (including the protection of carbon-rich sedimentary ecosystems) in addition to biodiversity conservation objectives.
- Carry out vulnerability assessments as an integral part of the establishment process to assess how climate change and ocean acidification will impact the conservation objectives of the MPAs/MPA network, and how many replication sites within a given biogeographic area are needed to safeguard particular vulnerable ecosystems.
- Develop climate change mitigation, adaptation and increased resilience strategies to avoid/mitigate the impacts, including those identified in the vulnerability assessment (e.g. protection of refugia, blue carbon ecosystems, areas important for biodiversity).
- Monitor MPA management effectiveness in response to climate change and adopt science-based (including traditional knowledge)

adaptive measures, as needed, in order to achieve the biodiversity and climate-related objectives.

In addition to these steps, it is important to consider the CBD criteria for ecologically representative MPA networks (CBD decision IX/20 (2008)) in their design:

- Areas important for biodiversity and ecosystem services
- Biogeographically representative
- Connectivity
- Replication of ecological features (replicated sites serves as a “policy insurance” against ecological/biological shifts/collapses in similar sites in a given bioregion)
- Adequate and viable sites (sufficient size and protection to ensure ecological viability and integrity).

Other effective area-based conservation measures (OECMs) are important tools that complement ecologically representative MPA networks (CBD decision 14/8 (2018)).

The following provides an example of how an NDC can include reinforcing quantifiable and qualitative information on MPA networks that promotes synergies across conventions:⁶¹ “By 2025, x% of blue carbon ecosystems [specifying which ones] will be protected through ecologically representative and well-connected systems of effectively and equitably managed MPAs and OECMs integrated into ecosystem-based marine spatial plans and

developed in accordance with CBD guidance contained in, inter alia, CBD Decisions VII/11 (2004), IX/20 (2008), 14/5 (2018) and 14/8 (2018). This is expected to reduce and/or avoid and/or sequester x tCO₂e by x [timeframe].”⁶²

In this context, it would be important to identify financing needs for marine activities and integrate these into the NDCs accordingly (see Principle 4 below).

The scope of the UNFCCC and the Paris Agreement clearly encompasses ocean and marine biodiversity/ecosystems as carbon sinks. NDCs play a crucial role in the implementation of the Paris Agreement, with important processes such as the ETF and the Global Stocktake mechanism ensuring that

NDCs are sufficiently ambitious in mitigating and adapting to the effects of climate change. In this context, international instruments concerning marine biodiversity and the ocean more broadly can support efforts to increase ambition toward the achievement of the Paris Agreement objectives.



PRINCIPLE 1 MAIN RECOMMENDATIONS

Strengthening ocean-related measures in NDCs and NAPs are key pieces of the solutions toolbox to respond to climate, biodiversity and sustainable development challenges.

WWF recommends that UNFCCC and Paris Agreement parties should:

- Increase their overall ambition on emissions reduction to secure the mitigation and adaptation function of marine and coastal ecosystems.
- Present quantifiable information on the ocean's contributions to mitigation and adaptation in their NDCs, ideally accompanied by base year information, timeframes for implementation of measures, scope and coverage.
- Present qualitative information on the ocean's contributions to mitigation and adaptation in their NDCs and NAPs to facilitate ocean-targeting actions across conventions. This could be done by linking ocean-specific proposed measures to guidelines developed under other conventions (as in the example above).
- Mobilize capacity building and adequate resources for the identification and development of ocean-climate measures (including with respect to the use of standardized metrics for planning and reporting purposes) and clearly communicate the short- and long-term financial support, capacity building and technology transfer needs for ocean-climate actions via NDCs and other relevant communications to the UNFCCC.
- Make use of EBSA descriptions as a means to identify blue carbon areas, climate refugia and ecosystems important for adaptation, and build capacity to support this.
- Identify and incorporate more explicitly all blue carbon habitats and refugia in management plans for MPAs and community conserved areas,⁶³ and ensure that iterative and sustained monitoring systems are in place to enable coherent ocean-climate conservation and management measures.
- Request the IPCC to develop a supplement to its 2006 guidelines for national inventories of anthropogenic emissions by sources and removals by sinks for other blue carbon ecosystems beyond those covered under the IPCC Wetlands Supplement. The guidelines should include blue carbon ecosystems such as macroalgae (e.g. kelp forests); maerl, mussel, flame shell, brittlestar and bryozoan beds; biogenic reefs; and different types of sediments, among others. This would promote the inclusion of such ecosystems into NDCs and NAPs, as well as ensure consistency and comparability among the information provided through the ETF.
- Promote and commit to capacity building and resource mobilization for developing countries in order to advance the identification of EBSAs and implementation of area-based management tools, and the respective application of quantification and qualitative methods. This should also support the implementation of appropriate conservation measures in line with guidance developed under the CBD, Ramsar Convention, SDGs and other relevant instruments.
- Implement ecosystem-based marine spatial planning to provide a broader frame for sustainable and coherent decision-making on proposed ocean-climate solutions.
- Integrate biodiversity-inclusive EIAs and SEAs in national legislation and ensure that climate change and ocean acidification effects are fully considered in project proposals, as well as in policies, plans and programmes, with meaningful public participation. EIAs and SEAs provide an opportunity to integrate minimum standards for conservation and equity developed under different conventions, to achieve true sustainability.

Mangroves can provide nature-based solutions that address both the climate and biodiversity crises.
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PRINCIPLE 2. **MAKE NATURE A KEY PART** **OF THE SOLUTION**



2. MAKE NATURE A KEY PART OF THE SOLUTION

Green and blue coastal infrastructure can provide nature-based solutions,⁶⁴ addressing both the climate and nature crises. These should consider the migratory shifts of species, fisheries productivity, spatial planning and integrated coastal and ocean zone management. Conserving intact ecosystems and restoring degraded coastal ecosystems should be a priority.⁶⁵ This section explores issues for consideration by the UNFCCC, including links with other conventions such as the CBD and Ramsar Convention.

The conservation, restoration and sustainable use of blue carbon ecosystems (including mangroves, seagrass beds, saltmarshes and several others)⁶⁶ is key to achieving both climate and biodiversity goals. These ecosystems can mitigate GHG emissions, build climate adaptation and ensure the continued provision of services for coastal livelihoods, including food security and protection from storms. The Blue Carbon Initiative⁶⁷ guidelines recognize that including all blue carbon ecosystems in the NDCs' carbon accounting framework requires planning and strengthened capacities.⁶⁸ Given that capacities and data availability vary from country to country, the guidelines adopt a tiered approach for the inclusion of coastal wetlands in NDCs, in line with the Wetlands Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

With respect to wetland protection, the 1971 Convention on Wetlands of International Importance (Ramsar Convention) is particularly relevant. Under the Ramsar Convention, once a site has been listed as a Wetland of International Importance, the party in whose territory it is situated must formulate and implement planning that promotes the site's conservation and, as far as possible, its wise use.⁶⁹

Ramsar Resolution XIII.14 (2018) notes the role of the Ramsar Convention as a relevant policy framework for conserving and managing coastal wetlands, including coastal blue carbon ecosystems. Restoration of degraded wetlands, with priority to those relevant for climate change mitigation and adaptation, is incorporated in target 12 of the Ramsar Strategic Plan 2016-2024.⁷⁰ Parties with blue carbon ecosystems in their territories are encouraged to collect and analyse data, map these ecosystems, and make this information publicly available in order to update their coastal

wetland inventories and their threats; determine the range of ecosystem services that they support; estimate the carbon storage and fluxes of their coastal wetlands; and update their national GHG inventories to better reflect data for wetlands.⁷¹

Ramsar parties are also encouraged to apply ecosystem-based and integrated approaches in managing blue carbon ecosystems. These should be consistent with the principles and guidelines for incorporating wetland issues into integrated coastal zone management contained in Resolution VIII.4 to ensure recognition of their values, functions and services, including their role in climate change mitigation and adaptation.⁷² These efforts could be incorporated into NDCs, while the implementation of the Ramsar Convention principles and guidelines could be integrated into the next set of biodiversity goals and targets under the CBD post-2020 global biodiversity framework,⁷³ as a monitoring element.

Blue carbon ecosystems are not restricted to mangroves, seagrass beds and saltmarshes (see discussion in Principle 1), but these are the only marine ecosystems covered by the IPCC Wetlands Supplement on GHG accounting. Expanding the methodology to other blue carbon ecosystems would help countries integrate these ecosystems into their proposed NDC and NAP measures in a standardized manner.

For enhanced coherence, NAPs should also be consistent with CBD Decision 14/5 (2018), which adopted voluntary guidelines for the design and effective implementation of ecosystem-based approaches to climate change adaptation and disaster risk reduction. Nature-based solutions have not yet been defined under the CBD, whereas "ecosystem-based approaches to climate change adaptation" and "ecosystem-based adaptation" were defined under the above decision.⁷⁴

Despite not being formally defined under the CBD, nature-based solutions have been referred to as a possible action, “depending on national circumstances,” to accelerate progress on the Aichi Targets.⁷⁵ These actions, based on the regional and thematic assessments of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and

on scientific literature, include the promotion of “investment in the development and use of nature-based solutions in order to address societal challenges, including through ecosystem restoration and the rehabilitation of agricultural systems, ecosystem-based adaptation and mitigation and ecosystem-based approaches to disaster risk reduction.”⁷⁶

BOX 3: ECOSYSTEM-BASED APPROACHES TO CLIMATE ADAPTATION, ECOSYSTEM-BASED ADAPTATION, AND ECOSYSTEM-BASED APPROACHES TO DISASTER RISK REDUCTION

Ecosystem-based approaches to climate change adaptation are defined as “holistic approaches that use biodiversity, and ecosystem functions and services to manage the risks of climate-related impacts and disasters.”

Ecosystem-based adaptation “is the use of biodiversity and ecosystem functions and services, as part of an overall adaptation strategy, contributing to the well-being of societies, including indigenous peoples and local communities, and helping people adapt to the adverse effects of climate change. Ecosystem-based adaptation aims

to maintain and increase the resilience and reduce the vulnerability of ecosystems and people in the face of the adverse effects of climate change.” (CBD Decision 14/5 (2018), Annex, section 1, para. 1)

Examples of marine-related ecosystem-based adaptation and ecosystem-based approaches to disaster risk reduction interventions contained in the guidelines include conservation of wetlands, mangrove restoration and protection, sustainable fishing and mangrove rehabilitation. (CBD Decision 14/5 (2018), Annex, para 5, table.)

CBD parties are encouraged to undertake the design, implementation and monitoring of ecosystem-based approaches to climate adaptation and disaster risk reduction with the full and effective participation of indigenous peoples and local communities (IPLCs), appropriately recognizing and supporting the governance, management and conservation of IPLCs’ territories and areas.⁷⁷ Parties are also encouraged to identify regions, ecosystems and biodiversity components that are or will become vulnerable to climate change at a geographic scale and to assess the current and future risks and impacts on biodiversity and biodiversity-based livelihoods, considering different scenarios,⁷⁸ and include such information in their reports to the convention.⁷⁹ Links to the Paris Agreement have been strengthened through this decision, which encourages CBD parties and other governments to integrate ecosystem-based approaches in their NDC updates.⁸⁰ In this context, parties are also encouraged to collaborate on the conservation,

restoration and wise/sustainable use of wetlands given their role in ecosystem-based approaches to adaptation.⁸¹

CBD parties and other governments are encouraged to make use of these guidelines “in line with the ecosystem approach when designing and implementing ecosystem-based approaches to climate change adaptation and disaster risk reduction, recognizing that this may also jointly contribute to climate change mitigation.”⁸² The ecosystem approach is recognized by CBD parties as “a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.”⁸³ The CBD adopted implementation guidelines for the ecosystem approach in 2004. Importantly, they consider the approach a priority framework for addressing and balancing the three objectives of the convention: the conservation of biological diversity (or biodiversity); the sustainable use of its components; and the

fair and equitable sharing of benefits arising from genetic resources.⁸⁴ Under the guidelines, humans are an integral part of ecosystems, and ecosystems' carrying capacities are to be respected to ensure long-term sustainability.

Linking the mitigation benefits of all blue carbon ecosystems with climate adaptation measures, by identifying the co-benefits of the ecosystem services they provide, can increase synergies across legal regimes. Some of the conservation and management measures that should be aligned across different conventions include climate-smart MPA networks (see box 2 above), sustainable and climate-smart fisheries measures, and incorporating climate change and ocean acidification effects into EIAs and SEAs as per CBD voluntary guidelines,⁸⁵ among others.

The draft CBD post-2020 global biodiversity framework (still under negotiation at the time of writing) integrates climate change in target 7: "By 2030, increase contributions to climate change mitigation, adaptation and disaster risk reduction from nature-based solutions and ecosystems-based approaches, ensuring resilience and minimizing any negative impacts on biodiversity."⁸⁶ There have been calls for indicators on the implementation and effectiveness of nature-based solutions to be developed and incorporated into the post-2020 framework.⁸⁷

To better align the climate, ocean and biodiversity regimes, WWF recommends that the next CBD COP recognizes the important role of nature-based solutions, including ocean-based ones, in line with the ecosystem approach.⁸⁸ To provide further clarity on this concept, COP could incorporate by reference the IUCN definition⁸⁹ and standards⁹⁰ for nature-based solutions, highlighting the role of the ocean (including express reference to the multiple benefits of blue carbon ecosystems and marine refugia), and encouraging the use of such nature-based solutions in line with the ecosystem approach, and respecting the rights of IPLCs.⁹¹

Furthermore, it is important that UNFCCC and Paris Agreement parties recognize that nature-based solutions should: (i) not be a substitute for a rapid phase-out of fossil fuels and a reduction of human footprint; (ii) involve a wide range of ecosystems on land and in the sea (not just forests); (iii) be implemented with the full engagement and free, prior and informed consent of IPLCs, respecting their rights,⁹² including cultural and ecological rights; and (iv) be explicitly designed to provide benefits for biodiversity.⁹³

Nature-based solutions and ecosystem-based adaptation can increase synergies across the climate and biodiversity regimes. Given the inclusion of nature-based solutions as a priority of the UNFCCC COP26 Presidency, COP26 provides an important opportunity to focus on this issue further. This should include ensuring that nature-based solutions meet accounting guidelines but do not duplicate or provide

a loophole for broader ambition on emissions reductions. Nature-based solutions also provide a unique opportunity for meeting adaptation and resilience goals under the climate and biodiversity regimes in a synergistic manner. Such efforts should include guidance to advance and incentivize priority ocean-based climate action and an integrated climate agenda that looks across the land-ocean interface. This will avoid ocean-based interventions being seen as offsets or as a distraction from reducing emissions from fossil fuels.



PRINCIPLE 2 MAIN RECOMMENDATIONS

WWF recommends that UNFCCC and Paris Agreement parties should:

- Include in their 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.
- Integrate into their NDCs, NAPs and other relevant national climate planning documents, ecosystem-based approaches to climate adaptation in accordance with the CBD guidance (CBD decision 14/5 (2018)).
- Recognize in a CMA the important role of nature-based solutions, including ocean-based ones, while noting that these should: (i) not be a substitute for a rapid phase-out of fossil fuels and a reduction of human footprint; (ii) be implemented with the full engagement and free, prior and informed consent of IPLCs respecting their cultural and ecological rights; and (iii) be explicitly designed to provide benefits for biodiversity.

WWF recommends that parties to the CBD should:

- Incorporate the Ramsar principles and guidelines mentioned above into the monitoring framework of the CBD post-2020 global biodiversity framework (with respect to draft target 1 or 7) for alignment. Draft target 7 should also reference ocean acidification and measures to minimize risks from it.
- Recognize the important role of nature-based solutions, including ocean-based ones, encouraging their application in line with the ecosystem approach, respecting the rights of IPLCs, and in a manner that provides benefits for biodiversity.

PRINCIPLE 3. PUT PEOPLE AT THE CENTRE



3. PUT PEOPLE AT THE CENTRE

The transformative change needed to address the climate and biodiversity crises cannot happen without the meaningful engagement and empowerment of people, especially rights holders and vulnerable groups. Effective responses to climate-related changes affecting the ocean will require intensifying cooperation and coordination among governing authorities, across spatial and temporal scales, and with local communities and indigenous peoples. This, in turn, requires investment in capacity building and public participation in the design of mitigation and adaptation measures.⁹⁴

The integration of local, indigenous and scientific knowledge systems into climate literacy has been identified as an enabler of public awareness and the understanding of local risks and associated responses.⁹⁵ This stems from a recognition of the opportunity that comes from securing the rights and governance of IPLC custodians who have effectively sustained their cultures and environments. An additional benefit is that this also begins to address social vulnerability and equity: meaningful public participation, deliberation and conflict resolution must be prioritized as the basis for fair and just climate resilience and sustainable development.⁹⁶

We need to see the ocean as a socio-ecological system, where principles of equity, inclusiveness and transparency, as well as ecological limits and function, underscore all aspects of decision-making. Equity includes ensuring that the benefits from ocean resources are available to all, respecting traditional rights, and particularly to those who are vulnerable, poor or marginalized. An inclusive approach should

prioritize community-led solutions, including the use of local, indigenous and traditional knowledge, revitalizing indigenous stewardship, and ensuring participation of vulnerable populations in decision-making processes at all levels. This is particularly relevant to nature-based solutions, where traditional and indigenous approaches have considerable merit compared to many coastal hardening tactics. Transparency is crucial to ensuring that public goods are managed in the public interest.



Today, much of the process of planning and managing the ocean is opaque. Communities have no seat at the table. There needs to be full transparency about planning and political decision-making involving the coastal zone.

This section looks into how these essential enabling conditions to support community resilience have been addressed by some international instruments, with a view to promoting more coherent approaches across the climate-ocean-biodiversity regimes. The current UN Special Rapporteur on human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment has noted how international environmental law reinforces human rights obligations through the duty of states to prevent serious harm deriving from activities under their jurisdiction.⁹⁷ The Special Rapporteur also notes the duty of wealthy states to contribute to the costs of mitigation and adaptation in low-income countries as per the principle of common but differentiated responsibility, underscoring that climate finance to these countries should be made in the form of grants, not loans.⁹⁸

Based on existing jurisprudence, the former UN Special Rapporteur on climate change and human rights has summarized the obligations of states to: assess the effects of activities under their jurisdiction on the climate; control the activities that may cause climate change; facilitate participation in climate change-related decision-making; and provide effective judicial remedies for those adversely affected.⁹⁹

WWF's NDC checklist¹⁰⁰ includes important recommendations that can help states comply with these human rights obligations, including with respect to inclusive participation in the development of NDCs and NAPs by:

- Adopting a transparent and inclusive multi-stakeholder process for designing NDCs
- Disclosing information relevant to this process by sharing document drafts, detailing the scope, ambition and content of the proposed enhanced NDCs
- Reporting back on process
- Ensuring participatory climate governance structures and mechanisms that facilitate implementation, including through effective coordination across ministries and meaningful engagement with sub-national governments and non-state actors.

Inclusive decision-making is a key component of sustainable development, as reflected in SDG 16.7 (Ensure responsive, inclusive, participatory and representative decision-making at all levels). Inclusive and meaningful participation in decision-making processes, including those related to EIAs and licensing processes, is consistent with the ecosystem approach under the CBD.¹⁰¹ The CBD's "Guidelines for the Conduct of Cultural, Environmental and Social Impact Assessment regarding Developments Proposed to Take Place on, or which are Likely to Impact on, Sacred Sites and on Lands and Waters Traditionally Occupied or Used by Indigenous and Local Communities"¹⁰² (Akwé: Kon Guidelines) is a relevant policy instrument. CBD COP has encouraged parties to incorporate these guidelines into national legislation.¹⁰³ Reference to the Akwé: Kon Guidelines in NDCs and NAPs, indicating whether they have been incorporated into national legislation, would enhance policy coherence.

As discussed in the previous section, area-based management tools, such as climate-smart, ecologically representative, well-connected, and effectively and equitably managed systems of MPAs (box 2) and OECMs,¹⁰⁴ are important tools for climate change and ocean acidification mitigation and adaptation. CBD decision 14/8 (2018) is particularly important in this respect, as in addition to adopting a definition and criteria for OECMs, it also contains relevant guidance on governance and equity related to protected areas and integration of MPA and OECM networks into wider seascapes. More specifically, Annex II of the decision contains the adopted "Voluntary guidance on effective governance models for management of protected areas, including equity, taking into account work being undertaken under Article 8(j) and related provisions."

As part of putting people at the centre of ocean-climate solutions, there is a need to respond to ocean-related impacts from climate change and biodiversity loss by leveraging support for finance flows, capacity building, inclusive planning and decision-making, and education. Achieving human well-being, in its multiple dimensions, is an integral part of sustainable development, and can only be achieved through procedural rights including access to participation, to information and to justice, and integration of multiple knowledge systems working in concert toward climate resilience. Meaningful public participation in decision-making processes, including licensing and planning processes, is an essential component of the human right to a clean and safe environment, and should be embedded in the ocean-climate nexus solutions across governance scales.



PRINCIPLE 3 MAIN RECOMMENDATIONS

WWF recommends that UNFCCC, Paris Agreement and CBD parties should:

- Secure enhanced global cooperation through new or strengthened mechanisms to address the linked issues of climate change and conservation of marine biodiversity for the achievement of sustainable development and the protection of human rights.
- Establish and implement appropriate policy and legal frameworks that ensure human rights in the implementation of climate and biodiversity goals, including recognizing and securing indigenous peoples' rights and integrating traditional knowledge of IPLCs¹⁰⁵ with their free, prior and informed consent.
- Adopt a transparent and inclusive multi-stakeholder process/platform for designing NDCs and for the post-2020 global biodiversity framework.¹⁰⁶
- Ensure inclusive participation in climate, ocean and biodiversity governance structures and mechanisms that facilitate implementation.
- Secure reference to the Akwé: Kon Guidelines in NDCs and NAPs, when relevant, and indicate if these have been incorporated into national legislation to ensure the meaningful participation of IPLCs in decision-making processes.
- Integrate local, indigenous and scientific knowledge systems into climate literacy and for understanding of locality-specific risks and the co-design of responses.
- Prioritize measures to empower local rights-holders and stakeholders and to address social vulnerability and equity through meaningful public participation, deliberation and conflict resolution.





PRINCIPLE 4.
JOIN UP THE CLIMATE
AND OCEAN
FINANCE AGENDAS

4. JOIN UP THE CLIMATE AND OCEAN FINANCE AGENDAS

In the run-up to UNFCCC COP26 and the CBD post-2020 global biodiversity framework, there is ever more focus on global public and private financing to address the linked challenges of climate change, nature and biodiversity loss in the context of sustainable development. Climate finance (defined as finance targeted at achieving alignment with the Paris Agreement) rose to an estimated annual high of US\$608 billion in 2017, though falling short of the estimated US\$1.6-3.8 trillion needed annually to achieve the low-carbon transition required to keep within the 1.5°C limit. An average of 44% of this finance comes from public sources.¹⁰⁷

Climate Finance vs. Investment Needed

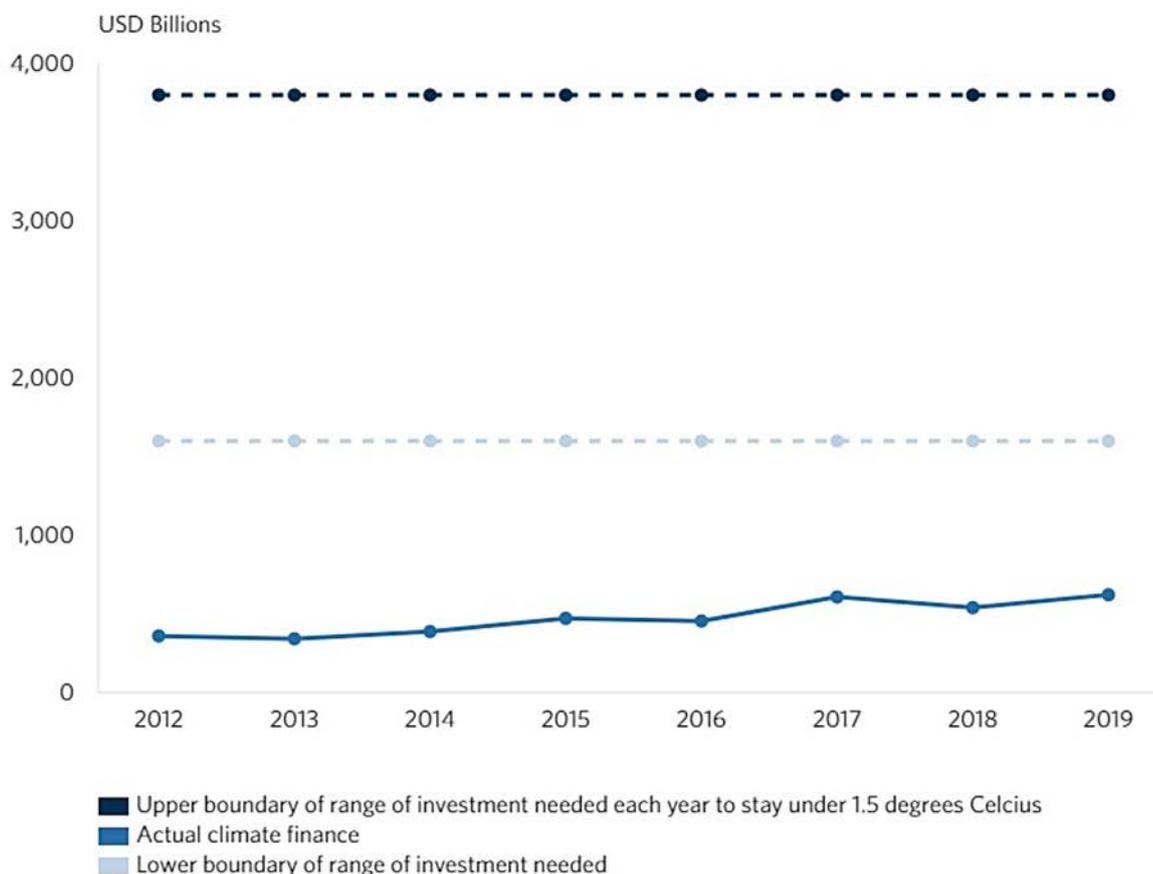


Figure 3: Overview of available climate finance for 2012-2019 against investment required to remain under 1.5°C.
Source: Climate Policy Initiative¹⁰⁸

Even more salient, however, is the gap that exists when it comes to finance for nature-positive outcomes and nature-based solutions. Only 8% of all climate finance¹⁰⁹ fits this category (though this represents an increase of 5% from 2015-2016), with the bulk going to cut emissions from energy use. The Paulson Institute estimates that the total biodiversity financing gap could reach US\$600-800 billion per year by 2030. This demonstrates the scale of the challenges that need to be addressed when it comes to meeting existing commitments on climate change, conservation and sustainable development.

The fundamental challenge is in moving the financial system as a whole towards sustainability, as the gaps in climate, biodiversity and ocean financing pale in comparison to the scale of business-as-usual financing of unsustainable activity. For example, the oil and gas sector was projected to receive over US\$5 trillion in state subsidies alone in 2017 – comfortably more than what’s globally required on an annual basis to keep within the 1.5°C limit.¹¹⁰

This section focuses on the enabling conditions and financing possibilities that can advance ocean-climate action. It includes recommendations for enhancing coordination, recognizing values and risks, and creating clarity and confidence, including through the Sustainable Blue Economy Finance Principles.

ENHANCED COORDINATION

The challenges of climate, biodiversity, nature and development, particularly with an ocean lens, are complex and cross-cutting: the solutions must also be cross-cutting and coordinated. Developing greater coordination across existing global governance frameworks requires extending the current focus of climate finance to more explicitly include coastal and marine investments that provide climate benefits alongside sustainable blue economy benefits in conservation, food and/or livelihood security.

Building these more systemic links across governance processes at national and international scales is a necessary step to meet commitments made to decarbonize, conserve nature and ensure sustainable development within both terrestrial and marine environments. In the absence of such a systemic approach, particularly to coordinated governance and public financing strategies, states will not be able to meet their commitments.

The benefits of taking a more systemic approach are particularly evident in the context of finance for nature-based solutions. This includes such topics as protecting and restoring coastal and marine habitats, restoring the sustainability and resilience of marine species, designating and managing MPAs and OECMs, and assessing and quantifying marine carbon sinks, for both conservation and resilience outcomes.

Blue carbon

Ocean-related climate finance has tended to focus on blue carbon from coastal mangroves and insurance against tropical cyclones. In reality, ocean financing needs and opportunities are far more pervasive, particularly with respect to nature-based solutions for climate mitigation, adaptation and resilience.

Mapping and assessing blue carbon ecosystems and marine carbon sinks will provide a better understanding of the scale of finance needed for their conservation and restoration, and the potential value.¹¹¹ As discussed above, the EBSA descriptions under the CBD can contribute to this, as can expanding the methodology of the IPCC Wetlands Supplement on GHG accounting to other blue carbon ecosystems.

While more should be done to capture the benefits provided by a broad range of blue carbon ecosystems, the current global price of carbon must increase for the financing needed for the regeneration of these ecosystems to become more attractive. A recent Earth Security report¹¹² examined the economic case for restoring mangrove forests as assets. It calculates the cost of fully restoring mangrove ecosystems worldwide at US\$11.1 billion over a 20-year period, which would enable the capture of 380 million tonnes of CO₂ by 2040. Covering the cost would require a doubling of the carbon price to US\$29 per tonne, while an increase in the carbon price to US\$60 per tonne could return a profit of US\$11.8 billion. In addition, mangrove restoration could save an estimated US\$65 billion per year in storm and flood damages.

Recognizing the needs of IPLCs, least developed countries and small islands developing states in financing ocean-climate action

Building on the principle of putting people at the centre, it is critical to consider social dimensions to financing ocean-climate action – particularly the

needs and perspectives of IPLCs at the national and sub-national levels, and least developed countries and small island developing states at the international level. Ensuring participation will often require capacity building, which in turn carries its own financing requirements, which must be met by public capital expenditure, official development assistance (ODA) and/or philanthropy.

While some countries¹¹³ have set out a role for the blue economy in their NDCs and NAPs, the financial requirements associated with this more systemic focus on the ocean-climate nexus (and the broader nature-biodiversity-climate nexus) are greater than current resource allocations or commitments allow for.¹¹⁴ As noted by the Addis Ababa Action Agenda, “expenditures and investments in sustainable development are being devolved to the sub-national level, which often lacks adequate technical and technological capacity, financing and support.” The global governance required to underpin integrated responses to integrated challenges must be reinforced through financial means as well as sustained political willingness to invest. As a global community, an

integrated response is not optional: it is an essential pathway toward sustainability and meeting existing obligations, including the Paris Agreement. In addition, neutral third-party capacity is required to monitor and account for financial flows in a transparent manner to support trust and understanding of the levels of climate and ocean finance worldwide against agreed targets.

Despite the opportunities in the sustainable blue economy to address climate mitigation, adaptation and resilience needs, as well as sustainable development and human rights, finance for the ocean from multilateral financing institutions, most notably the Green Climate Fund (GCF), has been limited.¹¹⁵ To date, nature-based solutions do not receive substantial financing: only US\$12 billion of the US\$94 billion earmarked for climate finance by the GCF (see box 4 below) has been allocated to nature-based solutions, and an even smaller proportion to ocean-based nature based solutions.¹¹⁶ In an effort to address this shortfall, the UNFCCC Standing Committee on Finance will host a forum on financing nature-based solutions and has requested inputs from states and other actors.

BOX 4: THE GREEN CLIMATE FUND

Established in 2010 and implemented a year later, the Green Climate Fund (GCF) is one of the two funds (alongside the Global Environment Facility) entrusted with implementing the financial mechanism of the UNFCCC, which aims to provide financial resources for climate adaptation and mitigation to developing country parties. The COP determines the GCF’s policies, programme priorities and eligibility criteria for funding. At the 2015 COP, it was decided the GCF alongside its counterparts would serve the Paris Agreement. The fund aims to maintain a 50/50 balance of adaptation and mitigation-oriented projects in its portfolio.

Capitalized at US\$10.3 billion initially and at US\$10.1 billion under its current replenishment (GCF 1), the fund has limited resources in comparison to the internationally agreed target of US\$100 billion per year mobilized by advanced economies towards climate finance. It nevertheless aims to leverage private finance for climate action through its Private Sector Facility.

While the GCF has mobilized some capital towards the blue economy, notably alongside the German development bank KfW through the Blue Action Fund in the Indian Ocean, the ocean is not explicitly included as one of the GCF’s ‘result areas’, primarily being featured within a narrow focus on ecosystems and ecosystem-based adaptation.

Given the needs of least developed countries and small island developing states in particular to link efforts to transition toward a sustainable ocean and low-carbon economies, institutions like the GCF should significantly step up their commitment to invest in solutions across the ocean-climate nexus. They need to scale up the allocation of financing to projects and funds that work across climate and ocean solutions, and scale out the types of interventions they will readily finance.

This should include a broadened remit for the GCF to finance ocean-based nature-based solutions for coastal resilience and climate adaptation, as well as leveraging incentives to finance climate-smart fisheries and protected areas. This is particularly timely following the commitment and call by France and the UK to set aside more significant portions of climate finance for nature-based solutions.¹¹⁷

Several tools and resources highlight the governance requirements for financing to flow as well as available mechanisms for financing. These include the *Ocean Finance Handbook*,¹¹⁸ *The Little Book of Investing in Nature*,¹¹⁹ the high-level panel papers on a sustainable ocean economy, notably *Ocean finance: financing the transition to a sustainable ocean economy*,¹²⁰ *Coastal development: resilience, restoration and infrastructure requirements*,¹²¹ and several sector-specific guides for conservation, fisheries, blue carbon, renewable energy and others.

The Science-Based Targets Network¹²² is working to identify targets for both nature and climate for governments and the private sector to allow alignment with planetary boundaries and sustainability goals.

These tools and resources may be explored in the context of instruments like the GCF to further the inclusion of ocean-related issues in their projects and programmes. The implementation of these governance measures also serves to de-risk ocean-climate investments and enable appropriate participation by the private sector.

VALUES AND RISKS

Ministries of finance or planning should assess and incorporate into decision-making the linkages between ocean-based ecosystem services and mitigation and adaptation priorities under the Paris Agreement.

They should also put coastal communities and people whose livelihoods, heritage and food security depend on the ocean at the heart of decision-making. Countries need the ability to track and manage the disbursement of capital flows toward ocean and climate and to work systemically and in an integrated fashion across central and line ministries, sectors and institutions to address complex challenges.

In this context, WWF welcomes the recent Dasgupta Review on the Economics of Biodiversity¹²³ commissioned by the UK Treasury as an example of a systemic approach to the impacts of biodiversity loss on the economy by a central ministry. While such assessment is important at national and sub-national scales, it is equally relevant in regional and global contexts, particularly in terms of the global frameworks for action on climate and sustainability, and building more explicit links between, for example, the Paris Agreement targets, the post-2020 biodiversity targets under the CBD, the SDGs, and the finance frameworks that flow from each.

Significant investment is being targeted at marine-based industries that are driving the degradation of critical ecosystems. These impacts and associated risks are being further exacerbated by the impacts of climate change, with negative consequences for the resilience of the ocean and dependent communities. Evidence suggests that these investments are undertaken without a full understanding of the costs to the environment, or the investment risks posed by degrading marine ecosystems and the goods and services that they provide.¹²⁴ In effect, investors and asset managers are facing increasing potential for margin-diluting risks and portfolios of stranded assets. It is therefore critical that science-based evidence is provided in a way that enables the investment community to fully comprehend these risks in order to guide their decisions toward the most sustainable development pathways.

It is important for the public sector to play a normative role in ensuring sustainable development objectives remain front of mind for all stakeholders. Embracing innovative ocean finance may carry unintended consequences, particularly for financial inclusion. Over-reliance on private finance may leave certain communities and ecosystems behind if they do not meet the requirements and benchmarks of financial institutions: for example, isolated coastal communities may have

difficulties in accessing capital or insurance. This must be tempered by public sector involvement through blended finance opportunities, providing sovereign insurance opportunities and prioritizing social as well as environmental objectives, while creating an attractive investment environment for financial institutions.

The public sector also has a strong role to play in encouraging and delivering effective stakeholder engagement, notably with IPLCs and vulnerable groups, which is vital to achieving an integrated ocean and climate governance response and a more balanced perspective on development that includes, but is not limited to, financial return. For example, care must be taken in applying risk modelling to vulnerable coastal communities: approaches that focus purely on financial returns may consider these “high risk”, disincentivizing investment in sustainable, holistic and inclusive development.

CLARITY AND CONFIDENCE

To facilitate and attract new private sector finance streams to develop integrated ocean-climate action, financial institutions need to be confident that these actions are investable. Financing opportunities must be de-risked by implementing a range of governance tools and approaches, such as improved regulation, incentives and disincentives, spatial tools and nature-based solutions, as well as targeted capacity building and community engagement.

Incentives

Grants and public financing for development priorities across sectors that rely on the ocean (energy, seafood, tourism and shipping, among many others) should be aligned to maximize opportunities for greater benefit. Governments and private finance institutions need to focus on aligning incentives¹²⁵ and public financing for projects and programmes that benefit both climate action and a sustainable blue economy (such as planning for renewable energy development within inclusive, ecosystem-based marine spatial planning processes). Joined-up approaches to governance outlined in the previous section underpin this. However, it is also important to recognize and quantify the impact of these incentives and any unintended consequences or, conversely, stacked benefits that may result from lesser or greater alignment of incentive structures.

Incentives can manifest through recognizing and amplifying the benefits afforded by the ocean in climate adaptation and resilience. Identifying climate-biodiversity and social stacked benefits from sustainable blue economy activity (and vice versa) and incentivizing their development offers a compelling approach toward stronger integration across the ocean-climate nexus.

Definitions of key terms

Definitions and standards for the blue economy support financial institutions in understanding the larger vision and what behaviours and interventions are considered sustainable. For example, definitions/criteria of EBSAs as well as standards for EIAs and SEAs, as described previously, are key components to building a common understanding between financial and non-financial stakeholders for the emerging ocean-climate nexus. Additional agreed definitions, notably for nature-based solutions, would be helpful in disbursing capital to these activities, as would the integration of marine and coastal ecosystem-based adaptation efforts within NDCs, as highlighted above.

Blended finance and other instruments

Coastal communities in many developing countries face significant structural barriers that prevent the flow of capital towards conservation and sustainable development, notably with respect to infrastructure and governance. There is a clear role for ODA and multilateral development banks as well as NGOs in addressing these challenges and facilitating and supporting the governance required for all forms of financing, including blended finance.

Nature protection, climate mitigation and adaptation policies have so far been developed in isolation, resulting in a failure to reach the scale of measures and financing needed to mitigate climate change impacts and halt the loss of biodiversity. Aligning targets, measures and financing for habitat protection, restoration and climate mitigation at significant scale to reduce GHGs and to foster both human and natural adaptation to climate change is essential. This is why it is critical to recognize and account for the value and importance of nature-based solutions and the multiple climate, environmental, social and economic benefits they provide.

Some nature-based solutions may be perceived to carry a higher risk to investors compared to more mainstream financing options, with higher transaction costs due to the relative novelty of the approach and its dependence on robust governance frameworks. This will likely require some form of de-risking through inclusion of public capital in a blended finance approach, leveraging the higher tolerance for risk associated with public capital (as well as certain providers of private capital, including philanthropy) to allow private capital to be deployed.

Various financing instruments exist that are innovative or transformational in their potential to direct capital toward the ocean-climate nexus, particularly by using blended finance strategies. These are discussed in full in a number of resources, notably the *Ocean Finance Handbook*¹²⁶ and the Conservation Finance Alliance's taxonomy of conservation finance instruments and guide to coral reef conservation financing tools.¹²⁷

SUSTAINABLE BLUE ECONOMY FINANCE PRINCIPLES

For private finance to play a complementary role to public capital in the ocean-climate nexus, all financial institutions need to recognize the centrality of sustainability to decision-making.¹²⁸ Notable instruments working to emphasize the importance of sustainability in financing include the Taskforce on Climate-Related Financial Disclosures (TCFD), Taskforce on Nature-Related Financial Disclosures (TNFD) and the forthcoming EU sustainable finance taxonomy. These sustainable finance frameworks should include more explicit reference to the ocean and its role in the response to commitments under the Paris Agreement. Guideline and implementation documents in particular must offer practical support on how to address sustainability in an ocean context for those institutions with an active marine and coastal footprint.

Of particular note are the Sustainable Blue Economy Finance Principles,¹²⁹ which were developed by the European Commission, WWF, the European Investment Bank and the Prince of Wales' International Sustainability Unit, the marine programme of which is now embedded into the

World Resources Institute. The principles are now housed under the United Nations Environment Programme Finance Initiative (UNEP FI).¹³⁰ They are the world's first global guiding framework for banks, insurers and investors specifically geared toward financing a sustainable blue economy. They promote the implementation of SDG 14, and set out ocean-specific standards, allowing the financial industry to mainstream sustainability in ocean-based sectors.

Building on the framework provided by the principles, UNEP FI's Sustainable Blue Economy Finance Initiative has developed sustainability guidance for financial institutions across seafood (including both fisheries and aquaculture), ports, maritime transportation, marine renewable energy, and coastal and marine tourism sectors. This guidance offers sector-specific insights into sustainable and unsustainable behaviour on the basis of materiality of social and environmental impacts, and provides specific recommendations on how financial institutions can respond and what behaviours and practice they should require or encourage from their investments.¹³¹ These recommendations are further contextualized through explicit links to the SDGs and their targets, as well as sector-specific links to GHG emissions, notably in the context of shipping and marine renewable energy, where decarbonization and emissions reductions are highlighted as indicators of sustainable behaviour.

To conclude, public finance will continue to play a large role in finance for the ocean-climate nexus, particularly in the form of grant and blended financing for developing countries in order to meet underlying governance needs. Public funds and facilities for climate finance, notably the Green Climate Fund, can and should do more to engage with the ocean and blue economy, through a greater focus on financing opportunities for conservation by expanding existing efforts such as the Blue Action Fund.¹³² In addition, access to such finance should be streamlined and disbursed as rapidly as possible, particularly to least developed countries and small island developing states facing the brunt of climate impacts.

While public finance interventions are crucial, particularly for efforts that do not generate a return, private finance has a clear role to play in addressing the joint climate-ocean crisis, provided a common language can be found



Coral reefs, Indian Ocean. © Alexis Rosenfeld

between stakeholders to clearly articulate respective roles and responsibilities. Aligning capital flows and incentives across objectives, and systemically linking development efforts for climate and ocean (as well as more broadly with biodiversity and nature), is essential to capture benefits

and avoid risks associated with complex and interlinked climate and sustainability challenges. A number of innovative finance instruments, outlined in this section and elsewhere, offer opportunities to unlock capital for the ocean-climate nexus.



PRINCIPLE 4 MAIN RECOMMENDATIONS

WWF recommends that the international community should:

- Promote enhanced coordination across UNFCCC, CBD and SDG financing mechanisms to leverage additional funding for ocean sustainability and nature-based solutions from public, private and blended sources of finance.

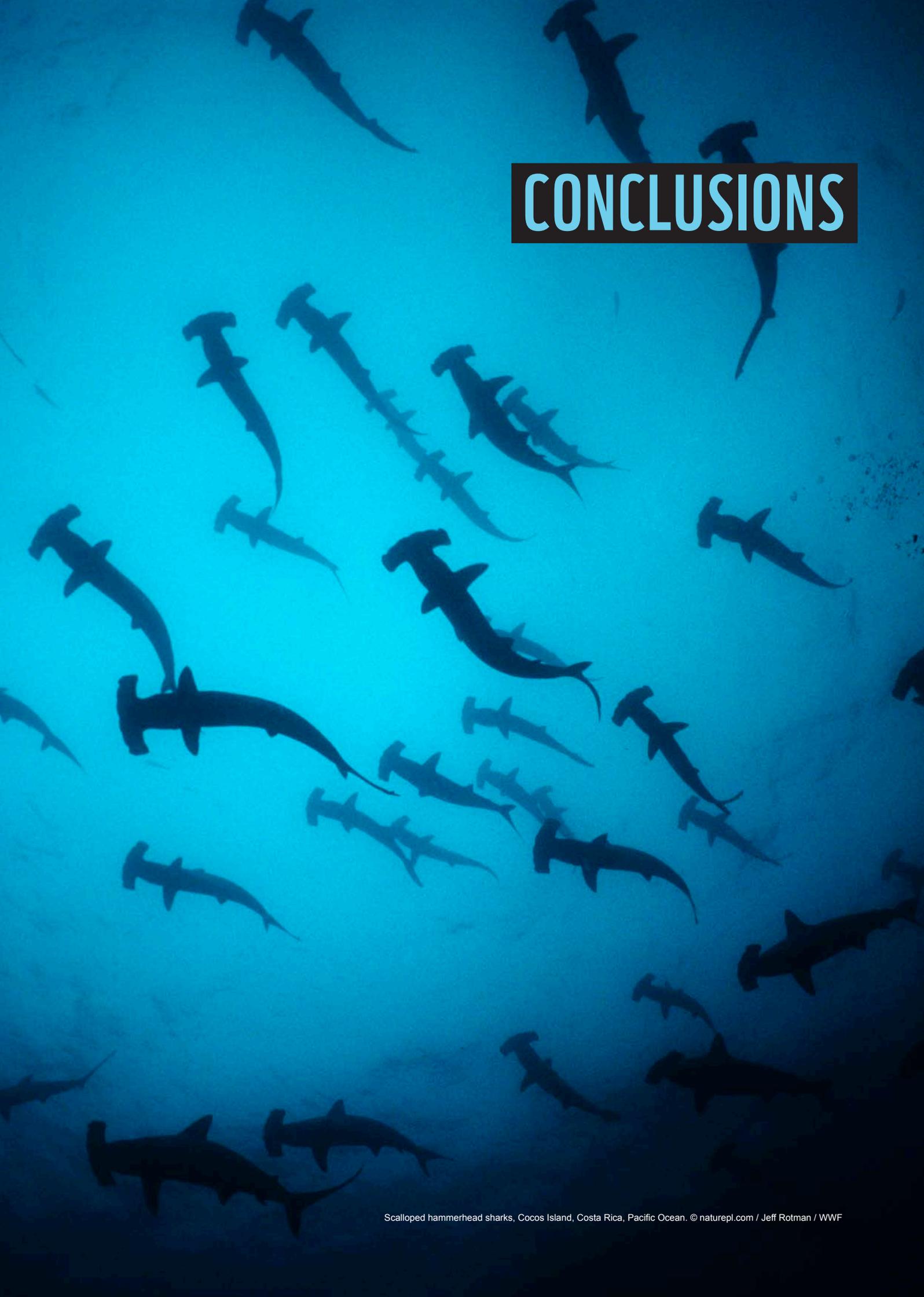
The public and private sectors should:

- Recognize the social and economic value of natural ocean and coastal infrastructure and the environmental, social and economic risks of business-as-usual approaches across maritime activities and fully integrate these values and risks into future ocean and climate planning and financing.

- Prioritize the de-risking and enabling of investment in ocean-climate action through incentivizing aligned good governance, capacity building and sustainable investment, creating clarity on definitions of key terms and leveraging blended finance solutions, in particular for nature-based solutions that offer both climate and ocean benefits.

Financial institutions should:

- Adopt the Sustainable Blue Economy Finance Principles to create clarity and consensus on what sustainability means in financing. In addition, other emerging sustainable finance frameworks must acknowledge the importance of the sustainability and health of the ocean and incorporate a strong reference to achieving ocean health as a fundamental response to commitments under the Paris Agreement.

A large school of scalloped hammerhead sharks swimming in clear blue water. The sharks are silhouetted against the light blue background, showing their characteristic wide, flattened heads and pointed snouts. They are swimming in various directions, creating a sense of movement and abundance.

CONCLUSIONS

More than ever, policymakers and the general public are aware that our climate and our ocean are in peril. Equally, it is clear that these are not separate crises. They are linked and must be addressed in concert. The magnitude of the problem requires bold, ambitious action, using every tool and mechanism at our disposal.

The ocean-climate nexus must be central to discussions about creating the solutions that will allow people and nature to thrive. Increased coordination across relevant global frameworks is needed to strengthen the mitigation, adaptation and resilience potential of marine and coastal ecosystems – and everything and everyone that depends on them.

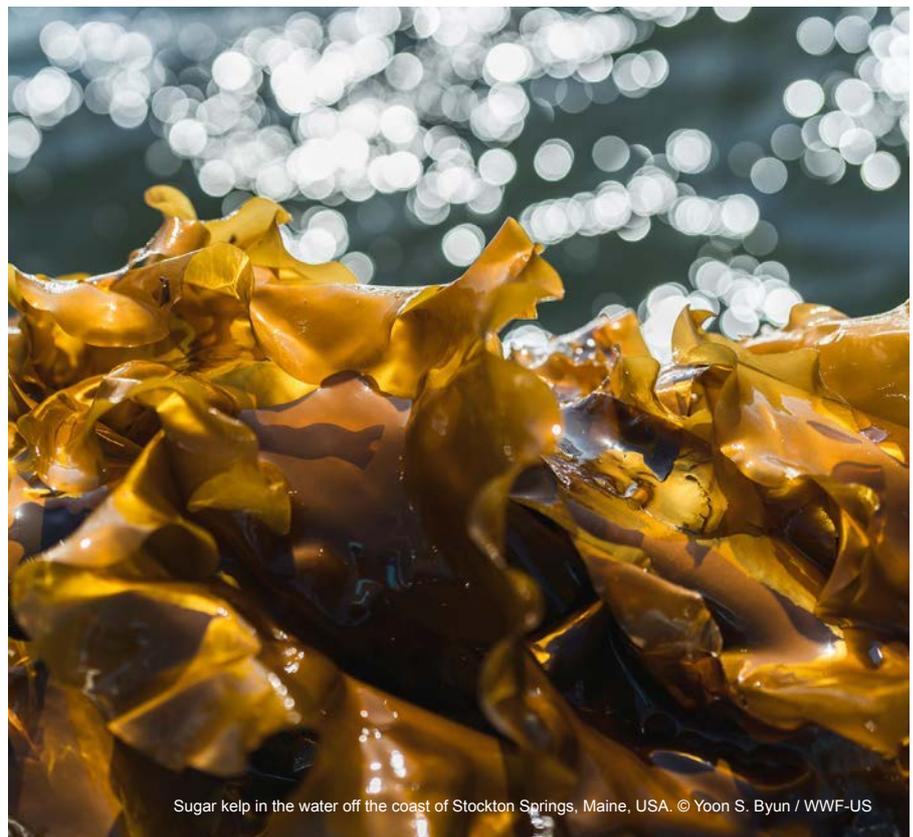
In the short term, we must strengthen actions to include blue carbon ecosystems such as mangroves, seaweed, saltmarshes and seagrasses in NDCs and national adaptation plans, and make better use of the IPCC Wetlands Supplement. Capacity building and resource mobilization for developing countries should be prioritized to this end.

In the medium term, ambition should be strengthened by broadening the scope of what is considered a blue carbon ecosystem through the development of an additional supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. This would maximize opportunities for ocean-related nature-based solutions while ensuring that information provided by parties under the ETF is consistent and comparable, as stipulated by Article 4 of the Paris Agreement. To assist in this endeavour, the CBD should recognize the important role of nature-based solutions, including ocean-based ones. In addition, recognition of the role that intact, healthy and functioning marine and coastal ecosystems play in realizing resilience must also be strengthened.

Mainstreaming existing guidance under the CBD in the development and implementation of NDCs and NAPs will enhance ocean and community resilience to climate change and ocean acidification impacts. Key areas include ecologically representative MPA networks, biodiversity-inclusive EIAs and SEAs, and ecosystem-based adaptation.

All efforts to respond to ocean-related impacts from climate change and biodiversity loss must leverage support for finance flows, capacity building, inclusive planning and decision-making, and education. Meaningful public participation in decision-making processes is part of the human right to a clean and safe environment.

While public finance interventions are crucial, particularly for efforts that do not generate a return, private finance is also needed to help address the finance gap and the joint climate-ocean crisis, provided stakeholders can agree clearly articulated roles and responsibilities. Aligning capital flows and incentives, and systemically linking development efforts for climate and ocean (as well as more broadly with biodiversity and nature), is essential to capture benefits and avoid risks associated with complex climate and sustainability challenges.



Sugar kelp in the water off the coast of Stockton Springs, Maine, USA. © Yoon S. Byun / WWF-US

RECOMMENDATIONS





PRINCIPLE 1: RAISE AMBITION AND URGENTLY DELIVER STRONGER AND SUSTAINED MITIGATION AND ADAPTATION ACTIONS

Strengthening ocean-related measures in NDCs and NAPs are key pieces of the solutions toolbox to respond to climate, biodiversity and sustainable development challenges.

WWF recommends that UNFCCC and Paris Agreement parties should:

- Increase their overall ambition on emissions reduction to secure the mitigation and adaptation function of marine and coastal ecosystems.
- Present quantifiable information on the ocean's contributions to mitigation and adaptation in their NDCs, ideally accompanied by base year information, timeframes for implementation of measures, scope and coverage.
- Present qualitative information on the ocean's contributions to mitigation and adaptation in their NDCs and NAPs to facilitate ocean-targeting actions across conventions. This could be done by linking ocean-specific proposed measures to guidelines developed under other conventions.
- Mobilize capacity building and adequate resources for the identification and development of ocean-climate measures (including with respect to the use of standardized metrics for planning and reporting purposes) and clearly communicate the short- and long-term financial support, capacity building and technology transfer needs for ocean-climate actions via NDCs and other relevant communications to the UNFCCC.
- Make use of EBSA descriptions as a means to identify blue carbon areas, climate refugia and ecosystems important for adaptation, and build capacity to support this.
- Identify and incorporate more explicitly all blue carbon habitats and refugia in management plans for MPAs and community conserved areas,¹³³ and ensure that iterative and sustained monitoring systems are in place to enable coherent ocean-climate conservation and management measures.
- Request the IPCC to develop a supplement to its 2006 guidelines for national inventories of anthropogenic emissions by sources and removals by sinks for other blue carbon ecosystems beyond those covered under the IPCC Wetlands Supplement. The guidelines should include blue carbon ecosystems such as macroalgae (e.g. kelp forests); maerl, mussel, flame shell, brittlestar and bryozoan beds; biogenic reefs; and different types of sediments, among others. This would promote the inclusion of such ecosystems into NDCs and NAPs, as well as ensure consistency and comparability among the information provided through the ETF.
- Promote and commit to capacity building and resource mobilization for developing countries in order to advance the identification of EBSAs and implementation of area-based management tools, and the respective application of quantification and qualitative methods. This should also support the implementation of appropriate conservation measures in line with guidance developed under the CBD, Ramsar Convention, SDGs and other relevant instruments.
- Implement ecosystem-based marine spatial planning to provide a broader frame for sustainable and coherent decision-making on proposed ocean-climate solutions.
- Integrate biodiversity-inclusive EIAs and SEAs in national legislation and ensure that climate change and ocean acidification effects are fully considered in project proposals, as well as in policies, plans and programmes, with meaningful public participation. EIAs and SEAs provide an opportunity to integrate minimum standards for conservation and equity developed under different conventions, to achieve true sustainability.



PRINCIPLE 2: MAKE NATURE A KEY PART OF THE SOLUTION

WWF recommends that UNFCCC and Paris Agreement parties should:

- Include in their 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.
- Integrate into their NDCs, NAPs and other relevant national climate planning documents, ecosystem-based approaches to climate adaptation in accordance with the CBD guidance (CBD Decision 14/5 (2018)).
- Recognize in a CMA the important role of nature-based solutions, including ocean-based ones, while noting that these should: (i) not be a substitute for a rapid phase out of fossil fuels and a reduction of human footprint; (ii) be implemented with the full engagement and free, prior and informed consent of IPLCs respecting their cultural and ecological rights; and (iii) be explicitly designed to provide benefits for biodiversity.

WWF recommends that parties to the CBD should:

- Incorporate the Ramsar principles and guidelines mentioned above into the monitoring framework of the CBD post-2020 global biodiversity framework (with respect to draft target 1 or 7) for alignment. Draft target 7 should also reference ocean acidification and measures to minimize risks from it.
- Recognize the important role of nature-based solutions, including ocean-based ones, encouraging their application in line with the ecosystem approach, respecting the rights of IPLCs, and in a manner that provides benefits for biodiversity.



PRINCIPLE 3: PUT PEOPLE AT THE CENTRE MAIN RECOMMENDATIONS

WWF recommends that UNFCCC, Paris Agreement and CBD parties should:

- Secure enhanced global cooperation through new or strengthened mechanisms to address the linked issues of climate change and conservation of marine biodiversity for the achievement of sustainable development and the protection of human rights.
- Establish and implement appropriate policy and legal frameworks that ensure human rights in the implementation of climate and biodiversity goals, including recognizing and securing indigenous peoples' rights and integrating traditional knowledge of IPLCs with their free, prior and informed consent.
- Adopt a transparent and inclusive multi-stakeholder process/platform for designing NDCs and for the post-2020 global biodiversity framework.
- Ensure inclusive participation in climate, ocean and biodiversity governance structures and mechanisms that facilitate implementation.
- Secure reference to the Akwé: Kon Guidelines in NDCs and NAPs, when relevant, and indicate if these have been incorporated into national legislation to ensure the meaningful participation of IPLCs in decision-making processes.
- Integrate local, indigenous and scientific knowledge systems into climate literacy and for understanding of locality-specific risks and the co-design of responses.
- Prioritize measures to empower local rights-holders and stakeholders and to address social vulnerability and equity through meaningful public participation, deliberation and conflict resolution.



PRINCIPLE 4: JOIN UP THE CLIMATE AND OCEAN FINANCE AGENDAS

WWF recommends that the international community should:

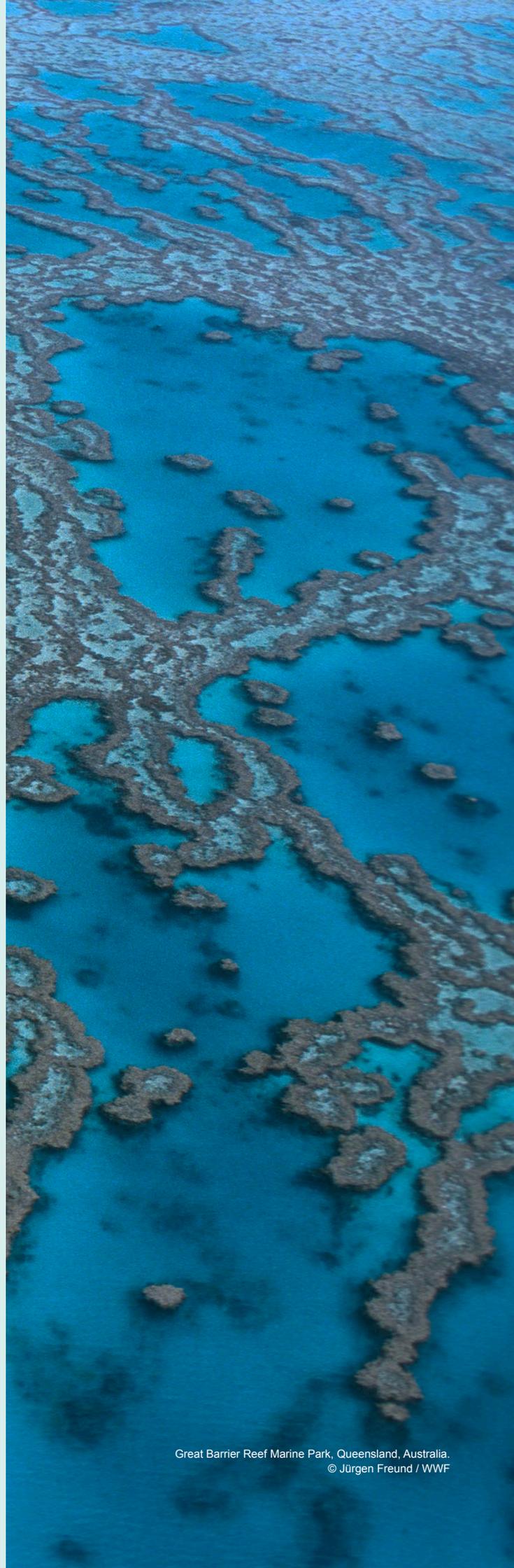
- Promote enhanced coordination across UNFCCC, CBD and SDG financing mechanisms to leverage additional funding for ocean sustainability and nature-based solutions from public, private and blended sources of finance.

The public and private sectors should:

- Recognize the social and economic value of natural ocean and coastal infrastructure and the environmental, social and economic risks of business-as-usual approaches across maritime activities and fully integrate these values and risks into future ocean and climate planning and financing.
- Prioritize the de-risking and enabling of investment in ocean-climate action through incentivizing aligned good governance, capacity building and sustainable investment, creating clarity on definitions of key terms and leveraging blended finance solutions, in particular for nature-based solutions that offer both climate and ocean benefits.

Financial institutions should:

- Adopt the Sustainable Blue Economy Finance Principles to create clarity and consensus on what sustainability means in financing. In addition, other emerging sustainable finance frameworks must acknowledge the importance of the sustainability and health of the ocean and incorporate a strong reference to achieving ocean health as a fundamental response to commitments under the Paris Agreement.



REFERENCES

1. IPBES. 2019. *Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. ipbes.net/global-assessment; IPCC. 2019. Special Report on the Ocean and Cryosphere in a Changing Climate. www.ipcc.ch/report/srocc
2. See for example, Sala *et al.* 2021. Protecting the global ocean for biodiversity, food and climate. *Nature* 592: 397–402. [doi: 10.1038/s41586-021-03371-z](https://doi.org/10.1038/s41586-021-03371-z)
3. There are important caveats to this, including issues associated with the location and scale, as well as recovery and disturbance inferred from stock differences. For further details see Macreadie *et al.* 2015. Losses and recovery of organic carbon from a seagrass ecosystem following disturbance. *Proceedings of the Royal Society B* 282(1817). royalsocietypublishing.org/doi/10.1098/rspb.2015.1537
4. Unsworth, R.K.F., Nordlund, L.M., Cullen-Unsworth, L.C. 2019. Seagrass meadows support global fisheries production. *Conservation Letters* 12(1): e12566. [conbio.onlinelibrary.wiley.com/doi/full/10.1111/conl.12566](https://onlinelibrary.wiley.com/doi/full/10.1111/conl.12566)
5. NatureScot (Scottish Natural Heritage). 2014. *NatureScot Commissioned Report 761 - Assessment of carbon budgets and potential blue carbon stores in Scotland's coastal and marine environment*. www.nature.scot/snh-commissioned-report-761-assessment-carbon-budgets-and-potential-blue-carbon-stores-scotlands
6. Costanza *et al.* 1997. The Value of the World's Ecosystem Services and Natural Capital. *Nature* 387(15):253-260. [doi:10.1016/S0921-8009\(98\)00020-2](https://doi.org/10.1016/S0921-8009(98)00020-2)
7. Ibid.
8. Ibid.
9. Lau, J.D., Hicks, C.C., Gurney, G.G. and Cinner, J.E. 2019. What matters to whom and why? Understanding the importance of coastal ecosystem services in developing coastal communities. *Ecosystem Services* 35: 219-230. [doi: 10.1016/j.ecoser.2018.12.012](https://doi.org/10.1016/j.ecoser.2018.12.012)
10. SDG 14.2.
11. For a summary of the dialogue see UNFCCC SBSTA. 2021. Ocean and climate change dialogue to consider how to strengthen adaptation and mitigation action: Informal summary report by the chair of the Subsidiary Body for Scientific and Technological Advice. unfccc.int/sites/default/files/resource/SBSTA_Ocean_Dialogue_SummaryReport.pdf
12. See also *Bern II Co-Leads Paper: Moving the synergies agenda forward in the context of the negotiations on the post-2020 global biodiversity framework* (28 December 2020. wedocs.unep.org/bitstream/handle/20.500.11822/34774/BCP.pdf
13. Koh, T.T.B. 1982. A Constitution for the Oceans. Remarks by Tommy TB Koh of Singapore, President of the Third United Nations Conference on the Law of the Sea. www.un.org/Depts/los/convention_agreements/texts/koh_english.pdf
14. UNGA Resolution 74/19 (2019), 6th preambular paragraph.
15. LOSC, Articles 192 and 194. See Boyle, A. 1985. Marine Pollution under the Law of the Sea Convention. *American Journal of International Law* 79(2): 347-372.
16. These benefits are sometimes referred to as “stacked services” due to the multiple benefits they provide.
17. UNGA Resolution 71/312 (2017), para 13 (j).
18. CBD, Art. 14 (b); CBD Revised Voluntary Guidelines for the Consideration of Biodiversity in Environmental Impact Assessments and Strategic Environmental Assessments in Marine and Coastal Areas (UNEP/CBD/COP/11/23), and its respective CBD decision XI/23 (2012); CMS Resolution 12.14 (2017), para 7, and its Annex. See also: www.cms.int/guidelines/cms-family-guidelines-EIAs-marine-noise and www.cms.int/sites/default/files/basic_page_documents/CMS-Guidelines-EIA-Marine-Noise_TechnicalSupportInformation_FINAL20170918.pdf
19. Paris Agreement Article 5(1) incorporates by reference Article 4(1) of the UNFCCC, which obliges parties to promote sustainable management, promote and cooperate in the conservation and enhancement of sinks and reservoirs of all greenhouse gases not controlled by the Montreal Protocol, including the ocean as well as coastal and marine ecosystems.
20. Rajamani, L. and Brunnee, J. 2017. The Legality of Downgrading Nationally Determined Contributions under the Paris Agreement: Lessons from the US Disengagement. *Journal of Environmental Law* 29: 537-551.
21. Because the Second Ocean Declaration (2016), para 3.
22. Gallo, N.D., Victor, D.G., Levin, L.A. 2019. Ocean Commitments Under the Paris Agreement. *Nature Climate Change* 7: 833-838.
23. Hoegh-Guldberg, O., Northrop, E., Lubchenco, J. 2019. The ocean is key to achieving climate and societal goals: Ocean-based approaches can help close mitigation gaps. *Science* 365 (6460): 1372-1374.
24. Decision 4/CMP1. See also Blue Carbon Initiative. 2019. *Blue Carbon and Nationally Determined Contributions: Guidelines on Enhanced Action – A guide on how countries may include blue carbon in their Nationally Determined Contributions*.
25. See also the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, which provides supplementary methodologies to estimate sources and sinks of GHG.
26. Decision 4/CMP1.

27. UNFCCC Secretariat. 2021. *Nationally determined contributions under the Paris Agreement: Synthesis report by the secretariat*. Advance version, FCCC/PA/CMA/2021/2 (26 Feb 2021).
28. Ibid, para 83.
29. Ibid, para 116.
30. Decision 4/CMP1. See also TNC's initiative Mapping Ocean Wealth, oceanwealth.org.
31. EBSA Information Sharing Mechanism. www.cbd.int/ebsa
32. The Azores Scientific Criteria and Guidance for Identifying EBSAs notes that biological productivity "can be measured as the rate of growth of marine organisms and their populations, either through the fixation of inorganic carbon by photosynthesis, chemosynthesis, or through the ingestion of prey, dissolved organic matter or particulate organic matter." CBD, IUCN. 2009. *Azores Scientific Criteria and Guidance for Identifying Ecologically or Biologically Significant Marine Areas and Designing Representative Networks of Marine Protected Areas in Open Waters and Deep Sea Habitats*, p.9.
33. Marine climate refugia are understood to be areas of the ocean where some or all variables (e.g. temperature, chlorophyll, sea surface height, pH or aragonite saturation, oxygen levels, salinity, current speed and direction) affected by climate change and ocean acidification are stable or changing the least. The protection of such sites can contribute to increased chances of biota survival, providing time for adaptation of species susceptible to climate change to occur. See Ban, S.S., Alidina, H.M., Okey, T.A., Gregg, R.M., Ban, N.C. 2016. Identifying potential marine climate change refugia: A case study in Canada's Pacific marine ecosystems. *Global Ecology and Conservation* 8: 41-54; and Johnson, D.E. and Kenchington, E.L. 2019. Should potential for climate change refugia be mainstreamed into the criteria for describing EBSAs? *Conservation Letters* 12: 12634.
34. See CBD Decision IX/20 (2008), Annex I; See also CBD Secretariat. 2019. *Azores Scientific Criteria and Guidance for Identifying Ecologically or Biologically Significant Marine Areas and Designing Representative Networks of Marine Protected Areas in Open Ocean Waters and Deep Sea Habitats*.
35. Johnson and Kenchington, op. cit.
36. Ibid.
37. See Wilson, K.L., Tittensor, D.P., Worm, B. and Lotze, H.K. 2020. Incorporating climate change adaptation into marine protected area planning. *Global Change Biology* 26: 3251-3267. See also CBD decision IX/20 (2008), Annex II for ecologically representative MPA network design criteria adopted by COP 9.
38. See Christiansen, L., Martinez, G. and Naswa, P. (eds.) 2018. *Adaptation metrics: Perspectives on measuring aggregating and comparing adaptation results*. Copenhagen: UNEP/DTU Partnership.
39. The Cancun Agreement (1/CP16 (2010) Para 15.
40. Coral reefs and other structure-forming organisms, such as seagrass, kelp, oyster beds, saltmarsh and mangroves, are known to provide food, livelihoods, cultural services and coastal protection for local communities. See Hoegh-Guldberg, O. et al. 2018. Impacts of 1.5°C Global Warming on Natural and Human Systems. In: IPCC. 2018. *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*.
41. See Duarte, C. 2013. The role of coastal plant communities for climate change mitigation and adaptation. *Nature Climate Change* 3: 961-968.
42. Hoegh-Guldberg et al., 2018.
43. Paris Agreement, Art. 7(5).
44. Paris Agreement, Art. 7(5).
45. Paris Agreement, Art. 7(5).
46. Paris Agreement, Art. 7 (6).
47. Paris Agreement, Art. 7 (9 b)
48. Hall, N. and Persson, A. 2018. Global climate adaptation governance: Why is it not legally binding? *European Journal of International Relations* 24(3): 540-566; see also Bodansky, D. 2016. The legal character of the Paris Agreement. *Review of European, Comparative & International Environmental Law* 25(2): 142-150.
49. Consistent with CBD decision 14/5 (2018) on ecosystem-based adaptation.
50. Paris Agreement, Art. 13 (6).
51. Decision 18/CMA.1 (2019).
52. Decision 18/CMA.1 (2019).
53. The 2020 Blue Carbon Audit of Scottish Waters provides an example of methods used for quantifying blue organic and inorganic carbon in the coastal waters of Orkney, and included (i) assessment of abundance of blue carbon habitat types (using data from in situ surveys); (ii) habitat mapping compilation for habitat prediction models for areas not covered by the in situ surveys; (iii) determination of carbon content of different habitat types through lab analysis; and (iv) calculation of total organic and inorganic carbon from each habitat type. The study included as biological habitats kelp forest, maerl beds, seagrass beds, saltmarshes, horse mussel beds, flame shell, brittlestar beds and bryozoan thicket. Sedimentary environments were also assessed to quantify the carbon they hold. See Porter, J.S. et al. 2020. Blue Carbon Audit of Scottish Waters. *Scottish Marine and Freshwater Science* 11(3). Marine Scotland.
54. See also proposed methods for enhanced consistency in GHG inventories from land-use fluxes by Grassi et al. 2021. Critical adjustment of land mitigation pathways for assessing countries' climate progress. *Nature Climate Change*. doi.org/10.1038/s41558-021-01033-6. Despite being focused on land systems, the study provide important methodological lessons that could be taken into account when developing specific inventory methods applicable to marine ecosystems.

55. Paris Agreement, Art. 13(7) (b); see also OECD/IEA (2017), supra note 47.
56. Paris Agreement, Art. 14(1).
57. Paris Agreement, Art. 14 (2).
58. Paris Agreement, Art. 14 (3).
59. Second Because the Ocean Declaration (2016), para 4.
60. 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)*.
61. See Wilson *et al.*, *op. cit.*
62. A quantification would be based on assumptions like: without protection, xx% of the area's sequestration potential would be lost; specific protection/restoration measures would increase existing rates by xx%, etc.
63. Such as those which qualify as other effective area-based conservation measures (OECMs). See CBD decision 14/8 (2018).
64. Nature-based solutions are defined under IUCN WCC Resolution 69 (2016) as "actions to protect, sustainably manage and restore national or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits."
65. WWF. 2020. *Advancing integrated climate and ocean ambition*. WWF submission to the Ocean Dialogue at the 52nd Session of UNFCCC SBSTA (June 2020).
66. See figure 1 on blue carbon ecosystems.
67. The Blue Carbon Initiative is a global programme that aims to mitigate climate change through the restoration and sustainable use of coastal and marine ecosystems with a focus on mangroves, tidal marshes and seagrasses. See www.thebluecarboninitiative.org.
68. Blue Carbon Initiative. 2019. *Blue Carbon and Nationally Determined Contributions: Guidelines on Enhanced Action – A guide on how countries may include blue carbon in their Nationally Determined Contributions*.
69. Ramsar Convention, Art. 3(1). See also Diz, D., Morgera, E. and Ntona, M. 2017. Background document on international trends and distinctive approaches of relevance to the CBD process on ecologically or biologically significant marine areas. CBD/EBSA/EM/2017/1/INF/1.
70. Ramsar Resolution XIII.14 (2018), para 5.
71. Ramsar Resolution XIII.14 (2018), para 11.
72. Ramsar Resolution XIII.14 (2018), para 12(a).
73. See CBD, Preparations for the Post-2020 Biodiversity Framework, www.cbd.int/conferences/post2020
74. *Voluntary guidelines for the design and effective implementation of ecosystem-based approaches to climate change adaptation and disaster risk reduction*, CBD decision 14/5 (2018), Annex, section 1, para. 1.
75. CBD Decision 14/1 (2018), Annex para 2(q).
76. CBD Decision 14/1 (2018), Annex para 2(q).
77. CBD Decision 14/5 (2018), para 3(a).
78. CBD Decision 14/5 (2018), para 4(a).
79. CBD Decision 14/5 (2018), para 4(g).
80. CBD Decision 14/5 (2018), para 5(b).
81. CBD Decision 14/5 (2018), para 8.
82. CBD Decision 14/5 (2018), para 2.
83. CBD Decision VII/7 (2004), Annex I, para 1.
84. As per CBD Decision VII/11 (2004), para 2.
85. CBD Revised Voluntary Guidelines for the Consideration of Biodiversity in Environmental Impact Assessments and Strategic Environmental Assessments in Marine and Coastal Areas (UNEP/CBD/COP/11/23), and its respective CBD Decision XI/23 (2012).
86. CBD/POST2020/PREP/2/1 (17 Aug 2020).
87. PEDRR, FEBA. 2020. Promoting Nature-based Solutions in the Post-2020 Global Biodiversity Framework. www.iucn.org/sites/dev/files/promoting_nbs_in_the_post-2020_global_biodiversity_framework.pdf
88. Decisions V/6(2000) and VII/11 (2004). Precedent for this framing exist in paragraph 2 of CBD decision 14/5 (2018) which encouraged parties, other governments and relevant organizations to make use of the voluntary guidelines on ecosystem-based approaches to climate change adaptation and disaster risk reduction in line with the ecosystem approach as per decision VII/11.
89. Nature-based solutions are defined under IUCN WCC Resolution 69 (2016) as "actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits".
90. IUCN. 2020. *Global Standard for Nature-based Solutions. A user-friendly framework for the verification, design and scaling up of NbS*. First edition. Gland, Switzerland: IUCN.
91. Also in accordance with the UN General Assembly Resolution 61/295 (2007), which adopted the UN Declaration on the Rights of Indigenous Peoples (UNDRIP).
92. Ibid.
93. Seddon, N. *et al.* 2021. Getting the message right on nature-based solutions to climate change. *Global Change Biology* 27(8): 1518-1546.
94. Bindoff, N.L. *et al.* 2019. Changing Ocean, Marine Ecosystems, and Dependent Communities. In: *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate*. www.ipcc.ch/report/srocc. See also unfccc.int/files/science/workstreams/the_2013-2015_review/application/pdf/4-sed-3_st.clair_theme_2_climate_resilient_pathways.pdf
95. Ibid.

96. Ibid.
97. UNGA doc A/74/161 (2019).
98. UNGA doc A/74/161 (2019), para 68.
99. Ibid. See also UN doc A/HRC/31/52 (2016) paras 72-84.
100. [WWF Checklist for the NDCs We Want](#)
101. See implementation guidance on the ecosystem approach in CBD decision VII/11 (2004).
102. CBD Decision VII/16 F. www.cbd.int/doc/decisions/cop-07/cop-07-dec-16-en.pdf
103. CBD Decision VII/16 F, para 2.
104. IPLCs' conserved areas can qualify as OECMs (see CBD Decision 14/8 (2018)).
105. WWF. 2021. *Nature Positive By 2030: Kunming Plan for Nature and People 2021-2030*. Discussion Paper. www.fint.awsassets.panda.org/downloads/kunming_2030_discussion_paper_final_english.pdf
106. See WWF's proposal on a multi-stakeholder/multi-sectoral platform on biodiversity and other mechanisms, in WWF. 2021. *Nature Positive By 2030: Kunming Plan for Nature and People 2021-2030*.
107. Macquarie, R., Naran, B., Rosane, P., Solomon, M., Wetherbee, C. and Buchner, B. 2020. *Updated View on the Global Landscape of Climate Finance 2019*. Climate Policy Institute. www.climatepolicyinitiative.org/publication/updated-view-on-the-global-landscape-of-climate-finance-2019
108. Ibid.
109. Almond, L. 2020. What's ahead for nature-based solutions? *Nature4Climate*. nature4climate.org/news/a-snapshot-of-nbs-in-action-today
110. IMF. 2019. Global Fossil Fuel Subsidies Remain Large: An Update Based on Country-Level Estimates. www.imf.org/en/Publications/WP/Issues/2019/05/02/Global-Fossil-Fuel-Subsidies-Remain-Large-An-Update-Based-on-Country-Level-Estimates-46509
111. The "Mapping Ocean Wealth Explorer" (maps.oceanwealth.org) may serve as a helpful basis on which to build in this respect.
112. Earth Security. 2020. *Financing the Earth's Assets: The Case for Mangroves*. earthsecurity.org/report/financing-the-earths-assets-the-case-for-mangroves
113. Notably Kenya through its recently submitted revised NDC, which includes specific reference to the development of the blue economy in both mitigation and adaptation strategies.
114. According to the Earth Security report on valuing mangroves, with the exception of Mexico, none of the top 10 countries in terms of restorable area of mangroves have included their carbon mitigation potential in their NDCs.
115. While the GCF and other similar global funds, such as the Adaptation Fund, have provided capital for ocean-related projects, they have been criticized for difficulties in accessing the funds and delays in receiving disbursements. While this criticism is not limited to finance for ocean-related projects, it compounds the limits of focus on the topic from within these funds.
116. UNEP. 2021. *Adaptation gap report 2020: Key messages*. United Nations Environment Programme.
117. Farand, C. 2021. France and UK lead push for climate finance to restore nature. *Climate Home News*, 11 January. www.climatechangenews.com/2021/01/11/france-uk-lead-push-climate-finance-restore-nature
118. Friends of Ocean Action. 2019. *The Ocean Finance Handbook*. Friends of Ocean Action. www3.weforum.org/docs/WEF_FOA_The_Ocean_Finance_Handbook_April_2020.pdf
119. Tobin-de la Puente, J. and Mitchell, A.W. (eds.). 2021. *The Little Book of Investing in Nature*. Global Canopy: Oxford.
120. Sumaila, U.R. et al. 2020. *Ocean Finance: Financing the Transition to a Sustainable Ocean Economy*. Washington, DC: World Resources Institute. www.oceanpanel.org/bluepapers/ocean-finance-financing-transition-sustainable-ocean-economy
121. Steven, A.D.L. et al. 2020. *Coastal Development: Resilience, Restoration and Infrastructure Requirements*. Washington, DC: World Resources Institute. www.oceanpanel.org/blue-papers/coastal-development-resilience-restoration-and-infrastructure-requirements
122. See sciencebasedtargetsnetwork.org
123. Dasgupta, P. 2021. *The Economics of Biodiversity: The Dasgupta Review*. London: HM Treasury.
124. Responsible Investor & Credit Suisse. 2020. *Investors and the Blue Economy*. www.responsible-investor.com/reports/responsible-investor-and-credit-suisse-or-investors-and-the-blue-economy
125. Including through concessional financing approaches, tax instruments, subsidies and other favourable policy instruments.
126. Friends of Ocean Action. 2019.
127. See www.conservationfinancealliance.org/cfa-publications
128. While this is true in the relationship between private and public finance in working toward the same outcomes, it is equally relevant across other types of capital when working toward the same outcome, including public capital from multiple sources with differentiating objectives, as well as between philanthropy and both public and private capital.
129. See www.unepfi.org/blue-finance/the-principles
130. See www.unepfi.org/ecosystems/sustainable-blue-economy-finance
131. United Nations Environment Programme Finance Initiative. 2021. *Turning the Tide: How to finance a sustainable ocean recovery: A practical guide for financial institutions*. Geneva. www.unepfi.org/publications/turning-the-tide
132. www.blueactionfund.org
133. Such as those which qualify as other effective area-based conservation measures (OECMs). See CBD Decision 14/8 (2018).

A leatherback turtle hatchling is seen from behind, crossing a sandy beach towards the ocean. The sun is low on the horizon, creating a warm, golden glow over the scene. The waves are visible in the distance, and the sand is wet with small puddles.

**OUR MISSION IS TO
CONSERVE NATURE AND
REDUCE THE MOST PRESSING
THREATS TO THE DIVERSITY
OF LIFE ON EARTH.**

Leatherback turtle hatchling crossing a beach towards the sea at sunrise,
Cayenne, French Guiana. © naturepl.com / Graham Eaton / WWF



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