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THE OCEAN AND CLIMATE CHANGE DIALOGUE

UNFCCC SBSTA 60

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SYNTHESIS REPORT

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Abbreviations and acronyms:

AI	Artificial Intelligence
AOSIS	Alliance of Small Island States
BBNJ	Agreement on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction
CBD	Convention on Biological Diversity
CDR	Carbon Dioxide Removal
COP	Conference of Parties
DOALOS	Division for Ocean Affairs and the Law of the Sea (UN)
GEF	Global Environment Facility
GHG	Greenhouse gas
GST	Global Stocktake
IMO	International Maritime Organisation
IOC	Intergovernmental Oceanographic Commission
IPCC	Intergovernmental Panel on Climate Change
mCDR	marine Carbon dioxide removal
NAP	National Adaptation Plan
NBSAP	National Biodiversity Strategies and Action Plan
NDC	Nationally Determined Contribution
SBSTA	Subsidiary Body for Scientific and Technological Advice
TEC	Technology Executive Committee
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNFCCC	United Nations Framework Convention on Climate Change

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Disclaimer: This document summarises the views expressed during the 2024 Ocean and Climate Change Dialogue, and does not represent the opinions of authors. This document does not anticipate the conclusions the co-facilitators will reach in the Informal Summary Report, and does not include the additional inputs collected during the consultations.

► EXECUTIVE SUMMARY

- The 2024 Ocean and Climate Change Dialogue focused on (1) **Marine biodiversity conservation and coastal resilience**, and (2) **Technology needs for ocean-climate action, including finance links**. Co-facilitators Julio Cordano (Chile) and Niall O’Dea (Canada) shared an [information note](#) to offer valuable context for the Dialogue, and will prepare an informal summary report of the discussions to be presented at COP30 in Baku.
- *On topic 1*, the effective management, conservation and restoration of marine biodiversity was recognised as a multi-purpose solution that can contribute to mitigation and adaptation. Participants stressed the critical need to further mobilise resources, build capacity and enhance partnerships – involving a wide-range of stakeholders. There was a clear call to consider immediate exposure to the coastal impacts of climate change when allocating financial resources i.e. to incorporate a risk-based approach to financial support allocation.
- *On topic 2*, the discussion focused on five areas of technology, namely ocean renewable energy, decarbonised shipping, marine carbon dioxide removal, artificial intelligence and satellite-based technologies. Participants noted the importance of enhancing scientific research, engaging with local actors and improving access to funding. They also raised the importance of national policy frameworks, including tools such as marine spatial planning, to prevent adverse impacts of these new technologies on marine and coastal biodiversity.

► KEY MESSAGES

- The **next round of Nationally Determined Contributions (NDCs)**, due in February 2025, **provides a great opportunity for Parties** to enhance their ocean-based mitigation and adaptation efforts – noting that nature-based solutions should not be a substitute for drastic emissions reductions.
- Parties are **in need of additional guidance** on how to fully leverage ocean-based measures in their national strategies, and highlighted the role of the Dialogue in carrying forward the conclusions of the Global Stocktake and guiding the revision of their NDCs.
- The Dialogue should be following a **clear roadmap to be defined for the years** ahead in order to progressively address a variety of solutions and continuously take stock of progress made and remaining gaps to fill. It should also consider more focused topics to facilitate concrete action.
- There is a **clear need for increased cooperation and synergies within the UNFCCC and across frameworks**, especially the Convention on Biological Diversity, the High Seas Treaty, and the 2030 Agenda for Sustainable Development. In this context, the next UN Ocean Conference can act as a lever to accelerate ongoing processes.

All participants are invited to share their statements, case studies and relevant resources, by email (ocean@unfccc.int).



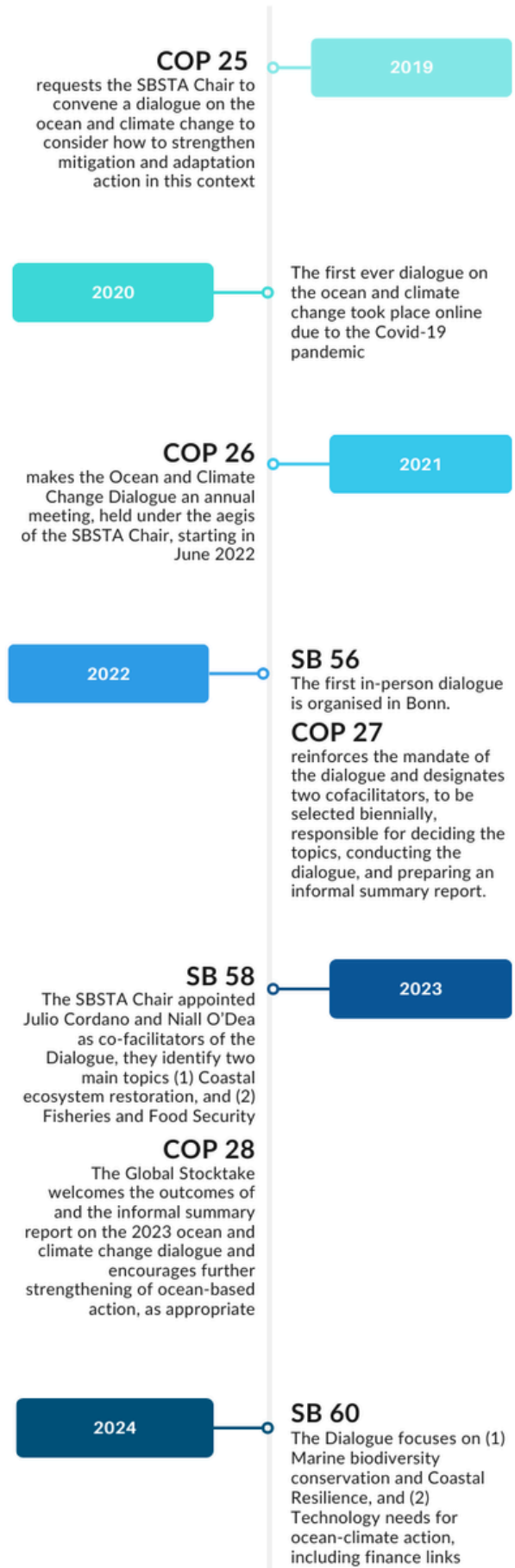
► INTRODUCTION AND MANDATE

The Ocean and Climate Change Dialogue has become the main entry point for fostering international cooperation to **support the integration and implementation of ocean-based climate action** under the UN Framework Convention on Climate Change (UNFCCC). Initially created as a one-time event, the **strong interest shown by Parties** led to its establishment as an annual event, conducted by two co-facilitators – currently Julio Cordano (Chile) and Niall O’Dea (Canada) for the 2023-2024 biennial. Their remit includes being responsible for identifying each year’s priority topics for the dialogue, in consultation with Parties and observers. The 2024 edition, which took place on 11 and 12 June in Bonn, focused on: (1) **Marine biodiversity conservation and coastal resilience**, and (2) **Technology needs for ocean-climate action, including finance links**. The [information note](#), prepared by the co-facilitators offered valuable context for these discussions.

This synthesis report provides a brief overview of the presentations and discussions that took place during the Dialogue, in anticipation of the more detailed summary report that will be prepared by the co-facilitators with the support of the UNFCCC Secretariat.



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► HIGH-LEVEL REMARKS AND OPENING

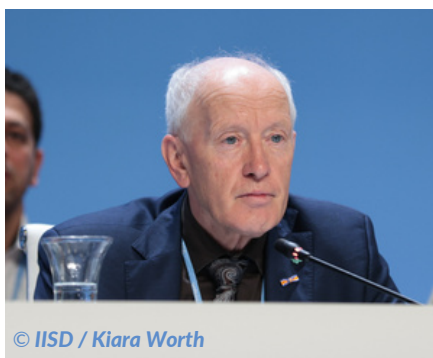
Niall O’Dea, co-facilitator, opened the 2024 Ocean and Climate Change Dialogue by emphasising that the Dialogue has become a key annual milestone to advance ocean-based climate action. He recalled that the themes and the structure of the 2024 Dialogue were chosen based on the March 2024 consultation, and on the idea of building on the outcomes from the previous editions.

Harry Vreuls (*left*), Chair of the Subsidiary Body for Scientific and Technological Advice (SBSTA), retraced the history of the Dialogue since its creation in 2019. He described the Dialogue as pivotal in sharing good practices and knowledge. He noted however that the Dialogue is “*more than a forum for discussion*” and constitutes “*a call to collective ocean-based climate action*”. This call was echoed by the recent outcome of the first Global Stocktake, which encouraged further strengthening of ocean-based climate action.

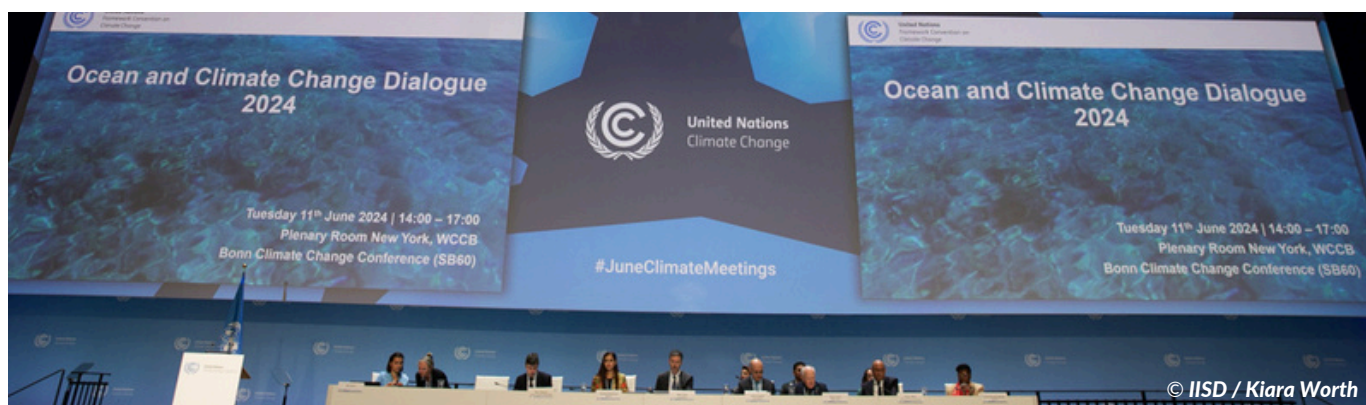
Simon Stiell (*centre*), UNFCCC Executive Secretary, noted that this outcome was a culmination of several COPs and years of change with increased recognition of the ocean. He added that, with the next round of Nationally Determined Contributions (NDCs) due in February 2025, the international community stands at the shore of a great opportunity to enhance ocean-based mitigation and adaptation efforts. In this context, the 2024 Dialogue can empower Parties and guide them in the revision of their NDCs and National Adaptation Plans (NAPs). Using the image of a diver in need for oxygen, he called for more resources to deliver on national strategies, especially finance and innovation. Simon Stiell reassured that the UNFCCC, along with other UN agencies, is committed to support states in their efforts.

Building on this, **Vidar Helgesen**, Executive Secretary of the UNESCO’s Intergovernmental Oceanographic Commission (IOC), recalled the mandate of IOC to advance international ocean observations and research, and to put ocean knowledge to use for better ocean management and sustainable development – including in the context of NDCs and NAPs. To deliver on this mandate, IOC coordinates the [UN Decade for Ocean Science](#), and hosted a few months ago the first [Ocean Decade Conference](#). The outcome statement of the Conference clearly identifies the urgency to co-design and co-produce science, knowledge and solutions to scale up and accelerate climate action. Vidar Helgesen also urged stakeholders to refer to the recent [State of the Ocean Report](#), which emphasises the importance for better integrating the ocean into international climate strategies.

In light of this shared sense of urgency, the third UN Ocean Conference was highlighted as an opportunity to deliver on global goals. Representing France, **Kevin Magron** (*right*) emphasised that France and Costa Rica, as co-hosts, seek to make this Conference a significant milestone for ocean action – building on recent achievements (e.g., Kunming-Montreal Agreement). As such, they have identified three cross-cutting priorities for the conference: ocean governance, blue economy and finance, and ocean sciences. To address these, three Special Events will be organised: a Scientific Congress, a Blue Economy and Finance Forum, and a Summit of Cities and Regions facing Sea level rise. They will feed into the conference’s main outcome, the ‘Nice Ocean Action Plan.’ Another key outcome mentioned by Kevin Magron is the launch of the [International Panel on Ocean Sustainability](#) to strengthen the science-policy interface.



TOPIC 1: MARINE BIODIVERSITY CONSERVATION AND COASTAL RESILIENCE



► EXPERT PANEL TO SET THE SCENE

Presentation by Brittany Young, Member, Standing Committee on Finance

The Standing Committee on Finance was established in 2010 to assist the COP in exercising its functions related to the financial mechanisms of the convention including through:

1. The Biennial Assessment, which provides a comprehensive analysis of global climate finance flows. The next assessment will be published in September 2024, and there are ongoing efforts to include the ocean in this new assessment (depending on the availability of data).
2. The Report on the Needs of Developing Country Parties related to Implementing the Convention and the Paris Agreement, published every four years, evaluates the financial requirements of developing countries to achieve climate objectives. The first report (2021) iden-

tified various needs related to the ocean, including fisheries and aquaculture.

3. The annual Forum has been instrumental in fostering information and collaboration among bodies and entities dealing with climate change finance. The 2021 and 2022 editions focused specifically on financing nature-based solutions, including ocean-based solutions. Key initiatives, like the Seychelles' work on blue bonds, were also presented.

Participants were invited to engage in activities of the Standing Committee on Finance, including by contributing to the open call for evidence and providing input to inform upcoming reports: standingcommittee@unfccc.int.

Presentation by Stephanie Ockenden, Deputy Head of Secretariat, High Level Panel for a Sustainable Ocean Economy

The High Level Panel for a Sustainable Ocean Economy (Ocean Panel) is a unique global initiative representing 18 Heads of State across continents. The Panel is dedicated to creating a sustainable ocean economy that balances effective protection, sustainable production, and equitable prosperity. To deliver on this vision, the Ocean Panel has developed the Ocean Action Agenda for 100% sustainable ocean management of national waters, achieved through the development of Sustainable Ocean Plans. These plans, grounded in the

latest science, offer a unifying umbrella to effectively support a holistic approach with an inclusive, integrative, and iterative process; content that is place-based, ecosystem-based, and knowledge-based; and impactful outcomes that are endorsed, financed, and capacitated. In addition, the Ocean Panel also commissions research and drafts support materials, including the Blue Carbon Handbook which exemplifies how to translate the holistic approach into concrete action.

Presentation by Joanna Post, Head, Ocean Observations and Services, IOC-UNESCO

The [2024 State of the Ocean Report](#) aligns with the seven deliverables of the UN Decade of Ocean Science: a clean, healthy, productive, predicted, safe, accessible, and inspiring ocean. The report goes beyond physical, chemical, and biological parameters, providing insights to identify policy priorities and guide decision making. Among the policy options addressed, marine protected areas are presented as vital refuges for marine life, especially in blue carbon ecosystems, and marine spatial planning is noted for its role in reducing ecosystem pressures. Moreover, as the global population continues to grow, the report also stresses that

sustainable management of aquatic food can contribute to both climate and food security objectives. Overall, the report stresses the importance of strengthening ocean observation infrastructure to better predict and respond to climate impacts, such as sea level rise. Liberating data and building global ocean digital ecosystems can support robust NDCs and improve ocean management on all fronts. Although, it is also necessary to note that the report identifies global trends and that local variations should be considered to better adapt to climate impacts.

Presentation by Valentina Germani, Senior Legal Officer, UN Division for Ocean Affairs and the Law of the Sea

The UN Division for Ocean Affairs and the Law of the Sea (DOALOS) serves as the interim Secretariat for the Agreement on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction (BBNJ) – the first global instrument i.a. to address the impacts of climate change on marine biodiversity in areas beyond national jurisdiction. Emphasis is placed on building ecosystem resilience and maintaining ecosystem integrity in the face of climate change and the resulting impacts, such as ocean acidification. It promotes the establishment of marine management tools, including marine protected areas, and underscores the importance of disseminating information on climate change impacts as part of capacity-building initiatives. Moreover, it also encourages enhanced cooperation among relevant legal frameworks and bodies.

The Division also serves as the Secretariat for the UN Convention on the Law of the Sea (UNCLOS). In May 2024, the International Tribunal of the Law of the Sea highlighted in an [Advisory Opinion](#), states' obligations under UNCLOS to take measures to prevent, reduce and control greenhouse gas emissions to avoid harm to the marine environment and to conserve and restore marine ecosystems to enhance resilience to climate change and protect natural carbon stocks, thereby reinforcing the synergies between UNCLOS, the BBNJ Agreement, the UNFCCC and by association the Paris Agreement. Furthermore, the Tribunal underlined an obligation to assist developing states in their effort to address marine pollution from anthropogenic greenhouse gas emissions, including in terms of capacity-building.

Presentation by Sinikinesh Beyene Jimma, Chief, Marine and Coastal Ecosystems, UN Environment Programme

The UN Environment Programme (UNEP) works to conserve and restore marine ecosystems to build resilience. To that end, UNEP leverages several tools, including integrated coastal zone management, marine spatial planning and marine protected areas, and advocates for their inclusion in climate strategies. Examples of UNEP's various activities include protecting mangroves and coral reef ecosystems (e.g. Care of Ecosystem Restoration), supporting ecosystem-

based adaptation and developing early warning systems. UNEP adopts an integrated and participatory approach, looking also at opportunities to decarbonise our economies and shift to sustainable production and consumption practices. UNEP focuses on three main pillars: climate, nature and pollution actions, aligned with the three planetary crises. It supports decision makers, enhances capacity and technology access, and mobilises finance.

► SUMMARY HIGHLIGHTS FROM THE INTERACTIVE BREAKOUT DISCUSSIONS

	Moderators	Rapporteurs
1	Matt Frost, Plymouth Marine Laboratory	Marine Lecerf, Ocean & Climate Platform
2	Valentina Germani, UN DOALOS	Luz Angélica Gil, The Nature Conservancy
3	Pauli Merriman, WWF	Katie Thiessen, YOUNGO
4	Miriah Kelly, RINGO	Jessie Turner & Inken Dressler, Ocean Acidification Alliance
5	Thomas Pye, United Kingdom	Gail Sant, Nippon Foundation – University of Edinburgh Ocean Voices Programme

Guiding questions:

- *How can conservation measures such as marine protected areas, nature-based solutions and blue carbon ecosystems, support efforts by Parties to adapt to the accelerating impacts of climate change, restore biodiversity, support livelihoods, and maintain ecosystem services?*
- *What comprehensive strategies exist that can enhance coastal resilience against the impacts of climate change that are also informed by the outcomes of the Global Stocktake?*

Participants stressed the need to better understand, and thus capture, the multiple benefits of marine biodiversity and coastal ecosystems. The effective conservation, management and restoration of blue carbon ecosystems were highlighted as an opportunity to jointly deliver on mitigation and adaptation objectives. Some participants however noted that adaptation needs still need to be acknowledged more thoroughly through climate-smart planning. Additionally, participants highlighted the critical need to mobilise resources, improve data, spatial planning and methodologies, build capacity, and enhance coordination to advance and implement ocean-based measures in Parties' national strategies. France shared the example of the "Label Bas Carbone" designed to encourage the private sector in investing in the conservation of the blue carbon ecosystems.

In their call for more robust science coastal ecosystems, participants stressed the need to obtain and integrate local data, mapping and evaluation. The European Union

presented its new study on "Wetlands and Blue Carbon" to identify how its member states report on these ecosystems in their greenhouse gas emissions, and the steps they are taking to improve the accuracy of thi reporting. Several ideas were shared to build scientific cooperation, partnerships and intergovernmental coordination, especially at the regional and more local levels such as the development of regional centres and conservation action plans.

Participants agreed on the overall need to improve the inclusive engagement as well as coordination among diverse stakeholders at all levels. This requires an inclusive and participatory process to engage a wide range of actors in conservation action, including Indigenous Peoples, local communities, small-scale fishers and under represented or marginalised groups.

This process must also recognise and value diverse knowledge systems, drawing from multidisciplinary perspectives to help co-create effective solutions that

reflect the needs and perspectives of community stakeholders. Human rights-based approaches to ocean-based climate action, including community-led conservation, can help ensure that communities are actively consulted in the design and implementation of a Party's national strategies and policies. As an example, the United States shared its Ocean Justice Strategy, the United States shared its Ocean Justice Strategy (2023) designed to improve access of local communities to the benefits of a sustainable ocean economy. Participants also emphasised the potential of community-led conservation in contributing to alternative livelihoods for local actors.

In addition, participants stressed the funding challenges they are facing, especially for technology enhancement and capacity-building. They noted that funding mechanisms facilitated by the UNFCCC need to be better informed by community stakeholders. They also highlighted the need for multilateral funders to better understand the capacity challenges and constraints of recipient countries. For instance, some stakeholders shared challenges that relate to obtaining funding in remote communities with limited capacity, and stressed the importance of capacity development at country level and by multilateral funders.

Participants would be keen for more engagement from the Green Climate Fund across the full Dialogue to further raise awareness about the importance of fast tracking the delivery of ocean related funding in order to deliver mitigation and adaptation solutions. Representatives of Small Island Developing States shared the importance of forward-thinking funding, that not only addresses an immediate threat but ensures that funded projects can be maintained on a long-term scale to contribute to capacity sharing, monitoring and opportunity building. They also called for the recognition of their special needs as vulnerable countries, and asked for their vulnerability to become a criteria in the allocation of fundings.

Finally, participants emphasised that marine biodiversity conservation and coastal resilience can contribute to the delivery of the Paris Agreement and other global frameworks. Synergies with the 2030 Agenda for Sustainable Development, the Convention on Biological Diversity's (CBD) Global Biodiversity Framework and the BBNJ Agreement were mentioned. Many participants called for the alignment between NDCs and their biodiversity counterpart, the National Biodiversity Strategies and Action Plans (NBSAPs), to enhance coherence and efficiency at the national level. In that regard, they stressed the opportunities coming with the alignment of the simultaneous COPs of the three Rio Conventions at the end of 2024.



▶ PANEL DISCUSSION ON CASE STUDIES, BEST PRACTICES AND CHALLENGES

- **Sophie Mirgaux**, Special Envoy for the Ocean, Belgium
- **Denzel Atumurirava**, Oceans Stream, Ministry of Environment and Climate Change, Fiji
- **Gunnar Finke**, Ocean Team Leader, Head of MeerWissen Secretariat, GIZ, Germany

Sophie Mirgaux (*left*) emphasised that marine protected areas are one of the strongest measures to protect the ocean and tackle climate change. She noted that the “30x30 target” under the Kunming-Montreal Global Biodiversity Framework should not only address the quantity of protection but also the quality (e.g. level of protection, effectiveness management, monitoring, etc.). She added that effective conservation requires extending efforts beyond national jurisdictions to include the high seas and seabed. The BBNJ Treaty, signed by nearly 100 countries, marked a significant step in this direction. Countries are now in the process of ratifying the agreement – with an objective of 60 ratifications by the next UN Ocean Conference so that the treaty can enter into force. A “pre-COP” is also under preparation to address procedural and technical challenges so the first COP can focus on content.

Denzel Atumurirava (*centre*) on behalf of the Alliance of Small Island States (AOSIS), stressed the critical importance of marine biodiversity for Small Island Developing States – which largely depend on marine resources for food security, climate resilience, thriving economies and cultural heritage. He highlighted several best practices, including locally-managed marine protected areas and community-based fisheries management while highlighting three persisting challenges

namely growing climate change impacts, inadequate funding, and limited technological capacity. Denzel presented the case study of Fiji, highlighting their efforts to strengthen coastal resilience through initiatives such as mangrove restoration (e.g., the [Kiwa Initiative](#)). In that regard, he stressed the important role of Indigenous Peoples and local communities, and the traditional knowledge they hold. To conclude, he called for more international support to Small Island Developing States, advocating for increased financial resources and capacity-building.

Gunnar Linke (*right*) presented the [MeerWissen Initiative](#) funded by the German Ministry for Development. MeerWissen focuses on enhancing ocean knowledge and policy-making in Africa through partnerships and a co-design approach. It is supported by three pillars: (1) strengthening capacities in marine research and building knowledge, (2) stimulating the dialogue between researchers and policymakers, and (3) promoting digital solutions and innovation. The initiative has already completed 12 projects such as [MANCOGA](#) in Ghana, which uses mangroves for coastal resilience. The latter highlighted the importance of the co- design approach and of the involvement of local communities for success.



TOPIC 2: TECHNOLOGY NEEDS ON OCEAN-CLIMATE ACTION, INCLUDING FINANCE LINKS

► EXPERT PANEL TO SET THE SCENE

Presentation by Filippo Berardi, Climate Change Focal Area Coordinator, Global Environment Facility

The Global Environment Facility (GEF) has been actively working at the intersection of climate change and ocean conservation for the past three decades. Through trust funds and innovative finance, GEF is increasingly expanding its portfolio of work and now organises around 11 priority 'integrated programs' with 5 key 'focal areas' that lend themselves to investments that can boost the blue and green recovery. Many of these integrated programs areas are critically important to the ocean-climate priorities discussed during the Dialogue, including: Clean and Healthy Ocean, Blue and Green Islands, Ecosystem Restoration, Greening Transportation, Circular Solutions to Plastic Pollution, Biodiversity Beyond National Jurisdiction, and more. GEF discussed several green shipping projects awarded to address emissions from shipping and ports, improve energy efficiency, and advance low-carbon fuels and other technologies.

The GEF prides itself on their ability to develop innovative finance mechanisms, including blended finance and non-grant instruments, as well as their willingness to take risks. A great example of this is their recent coral bond, an outcome-based instrument used to channel blended finance for biodiversity conservation. The key innovation mechanism behind this instrument is the repayment of investors by outcome funders (the GEF) only when the pre-defined results have been achieved and independently assured and verified. This innovative model has never been tested at scale for marine ecosystems, due to challenges in defining and measuring robust outcomes. Although more risky, these instruments are critical to building capacity and bringing in additional private capital to finance conservation and close the biodiversity financing gap.

Presentation by Ambrosio Yobanolo del Real, Member, Technology Executive Committee

The Technology Executive Committee (TEC) was created to analyse issues and provide policy recommendations that support efforts to enhance climate technology development and transfer under the UNFCCC. Each year, the TEC shares key messages and recommendations on climate technology policies, as well as policy briefs and other technical documents to enhance information sharing. Recently, the TEC released a technical paper on [Emerging Climate Technologies in the Energy Supply Sector](#), including the following marine renewable energy technologies: floating wind systems, floating solar photovoltaic systems, wave power systems, tidal power systems, and ocean thermal energy conversion systems. This report can provide policymakers and other relevant stakeholders with information that may help their

decision making when defining national and/or regional strategies for accelerating the scale-up and implementation of marine renewable energy technologies. Last year, the TEC and the Climate Technology Centre and Network jointly published the report, [Technology and NDCs: Stimulating the Uptake of Technologies in Support of NDC Implementation](#), which includes the latest findings on technology needs, challenges, linkages between policy and implementation, and with national adaptation plans. The publication includes success stories that showcase the uptake of climate technologies in support of NDC implementation. Furthermore, the TEC kicked off the Artificial Intelligence (AI) for Climate Action workplan, with the aim to explore the role of AI as a powerful technological tool for advancing and scaling up climate mitigation and adaptation action.

Presentation by Fredrik Haag, Head, Office for London Convention, International Maritime Organisation

The International Maritime Organisation (IMO) is responsible for the safety and security of shipping and the prevention of marine and atmospheric pollution from ships. Green shipping is a key priority of the IMO, and they recently adopted the revised 2023 IMO Strategy on Reduction of GHG Emissions from Ships that calls for reducing greenhouse gas emissions from ships to net-zero by or around 2050, and sets the levels of ambition to reduce GHG emissions and guiding principles. The strategy also identifies barriers and supportive measures, including: capacity building, technical cooperation and research and development. The IMO is also the acting Secretariat for the Convention on the Prevention of Marine Pollution by

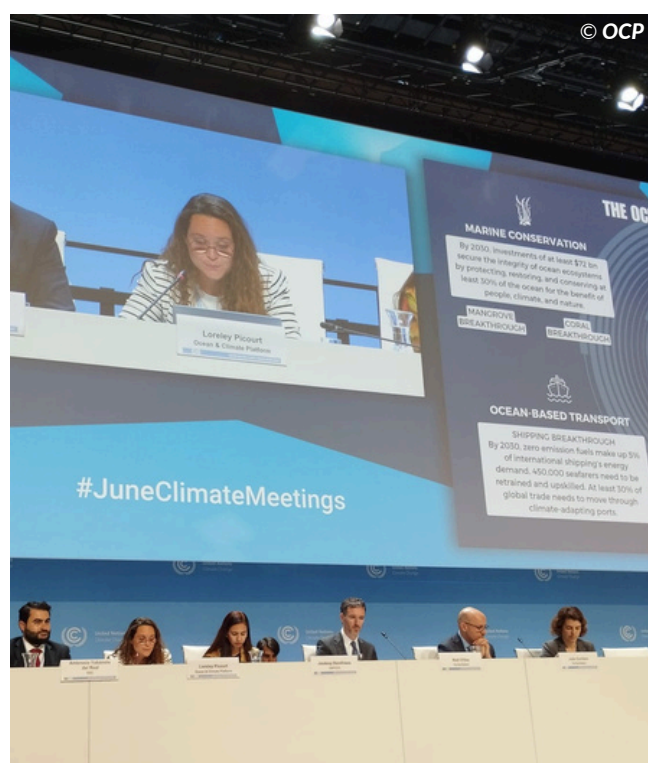
Dumping of Wastes and Other Matter, also known as the London Convention, which was updated in 1996 to the London Protocol. The Parties to the London Protocol have taken steps to ensure that new technologies with the potential to cause harm to the marine environment are effectively controlled and regulated. The London Protocol is the most advanced international regulatory instrument addressing carbon capture, storage, and sequestration in the marine environment, including marine geoengineering, such as ocean fertilisation. In 2013, Parties also adopted a protocol to regulate marine carbon dioxide removal, but they are still working to facilitate its entry into force.

Presentation by Loreley Picourt, Executive Director, Ocean & Climate Platform on behalf of the Ocean and Coastal Zones Group of the Marrakech Partnership for Global Climate Action

As a joint effort from the Marrakech Partnership and the High Level Climate Champions, the Ocean Breakthroughs identify crucial turning points to reach by 2030 to achieve a healthy and productive ocean in 2050. Focusing on five sectors (marine conservation, ocean renewable energy, shipping, aquatic food, and coastal tourism), they are designed to boost mitigation and adaptation efforts, while delivering benefits for Nature and People. Three priorities have been identified moving forward: (1) bringing the Ocean Breakthroughs campaign to CBD COP16 in the spirit of building synergies across fora and action agendas; (2) launching the Coastal Tourism Breakthrough at UNFCCC COP29; and (3) developing the first tracking tool for ocean-climate initiatives from non-state actors to assess their contribution to the Paris Agreement.

In line with Topic 2, the Ocean Renewable Energy Breakthrough – led by Ocean Conservancy and Orsted – calls for the installation of at least 380 GW of offshore capacity by 2030, while establishing targets and enabling measures for net-positive biodiversity outcomes. It is indeed crucial to emphasise the associated co-benefits with developing responsible offshore wind, which requires a tailored approach to ensure that the way we plan, permit, incentivise and invest in infrastructures is aligned with our biodiversity goals. For instance, marine spatial planning can guide the development of offshore wind energy in a way that not only minimises harm but also actively contributes to the health of marine ecosystems.

Offshore wind is a global solution, and deployment in emerging and developing markets is vital to achieving a clean ocean energy breakthrough. To deliver on this vision, the Breakthrough calls for \$10 billion in international concessional financing, which can significantly lower the costs of clean energy and make the transition accessible and affordable, encouraging large-scale deployment in developing countries, where ocean renewable energy development has been lacking.



► SUMMARY HIGHLIGHTS FROM THE INTERACTIVE BREAKOUT DISCUSSIONS

	Moderators	Rapporteurs
1	Joanna Post, Intergovernmental Oceanographic Commission of UNESCO	Whitney Berry, Ocean Conservancy
2	Stephen Minas, UNFCCC Technology Executive Committee	Carl Dudek, Monaco
3	Ambrosio Yobanolo del Real, UNFCCC Technology Executive Committee	Niels Peters Williams, UN Office on Drugs and Crime
4	Elise Murphy, Australia	Patrycja Enet, European MSP Platform, European Commission
5	Andrew McMaster, Canada	Tarub Bahri, Food and Agriculture Organisation

Guiding questions:

- *Considering the current developmental stages of ocean technologies, what are the critical pathways to developing and deploying sustainable ocean technologies towards net-zero emissions? How can the integration of automation and satellite technologies further transform our approach to ocean health and resource management under the UNFCCC process?*
- *Considering the current high costs and developmental stages of ocean energy technologies, what innovative financial approaches could be pursued to attract sufficient capital for research, development, and deployment to support countries in using technology to enhance participation in UNFCCC processes? How can Parties apply the potential role of public-private partnerships, green bonds, and climate funds in supporting these technologies?*

Discussions focused on five areas of technology:

- (1) deploying ocean renewable energy including offshore wind and other marine renewable energy;
- (2) decarbonising maritime shipping, including ports and associated operations and infrastructure;
- (3) carbon dioxide removal (CDR) technologies;
- (4) AI technologies to support more efficient and low-carbon activities in the ocean and coasts, and improved analysis of ocean data; and
- (5) Satellite-based technologies, which can support ecosystem conservation, promote sustainable navigation, and improve Maritime Domain Awareness.

Four requirements were identified to create an enabling environment for the development and deployment of these five technologies.

(1) Developing national policy frameworks can provide a clear signal to the private sector and help de-risk investments. These frameworks need to account for potential cross-cutting impacts of these technologies on people and nature, and where possible, prevent these impacts through the effective use of ecosystem-based marine spatial planning. There is also a need to establish a coherent approach to technology development across international institutions and frameworks, with references made to the London Convention and London Protocol, and to the CBD.

(2) Enabling research can help improve understanding of the ocean and associated technologies. While offshore wind is the most advanced ocean renewable energy, a comprehensive global framework for technology needs assessment can effectively support.

the identification of optimal areas for the deployment of other marine renewable energy technologies such as wave, tidal, and ocean thermal energy conversion. Noting there is no one-size-fits-all approach, this promotes the exchange of best practices while recognising the need for region-specific solutions. Research can help evaluate the effectiveness of emerging technologies, such as marine CDR, consider to what extent they could support climate goals, and determine whether risks, uncertainties, or unintended impacts outweigh the benefits of certain technologies.

(3) Engaging local communities can help facilitate the inclusion of local knowledge and perspectives, and help ensure that needs are being met with best technology options. Engagement can also promote social acceptance and implementation, and ensure equitable sharing of technological data and knowledge. Technology transfer and capacity-building are essential elements to promote access to technology, as well as helping to facilitate its implementation and effective use.

(4) Improving access to funding can support the deployment of ocean technologies. Technical expertise is often a gap. Also, technologies at different levels of readiness require different financing structures.

Capacity-building to support more effective access to funding mechanisms is a clear need, and a simplified process to access funding mechanisms could enhance access. At the same time, more widespread sharing of information on innovative financing approaches, such as public-private partnerships, would be beneficial. Concessional finance, for example, can help de-risk and attract investment to scale ocean-based, renewable energy technologies that will reduce greenhouse gas emissions from the energy sector. Financial tools and mechanisms can also be designed to ensure biodiversity conservation, and the inclusion of local communities. Financing requirements are not limited to the development and deployment of ocean-based technologies. For instance, it was noted that deploying technology was often accompanied with a need to upgrade coastal infrastructure, such as ports to accommodate low-carbon transport vessels and/or support the buildout of offshore renewable energy projects.

Finally, participants agreed on the importance to further include ocean-based solutions in NDCs. To that end, they called for additional guidance on how to fully leverage these solutions, and noted the need to continue to mainstream the ocean as a theme across UNFCCC processes.

► PANEL DISCUSSION ON CASE STUDIES, BEST PRACTICES AND CHALLENGES

- **Juan Carlos Bedoya Ceballos**, Head of Regulatory and Business Affairs, Ministry of Mines and Energy, Colombia
- **Nobuhito Mori**, Professor at Disaster Prevention Research Institute, Kyoto University, Japan
- **Taryn Laubenstein**, Senior Advisor in the Office of the Special Presidential Envoy for Climate, US
- **Dwikorita Karnawati**, Head of Indonesia Agency for Meteorology, Climatology and Geophysics, Indonesia

Dr. Juan Carlos Bedoya Ceballos presented Colombia's ocean renewable energy strategy. Highlighting the importance of the energy transition in climate mitigation, Dr. Bedoya emphasised Colombia's utilisation of satellite and physical territory information to identify and optimise offshore wind resources. Colombia is a co-chair of the Global Offshore Wind Alliance and is ranked among the top ten for its potential in Latin America and the Caribbean for offshore wind energy. The country is working on integrating environmental, social, and economic aspects

into their ocean renewable energy strategy. This strategy involves comprehensive marine spatial planning, identifying development areas along the Caribbean coast, and addressing challenges such as port development, community capacity building, and improvement of the permitting processes. Dr. Ceballos stressed the need for modernised policies and international support to finance these technologies, which are essential for enhancing Colombia's climate change mitigation efforts. The first round of offshore wind projects aims to generate 1 to 3 GW, attract over

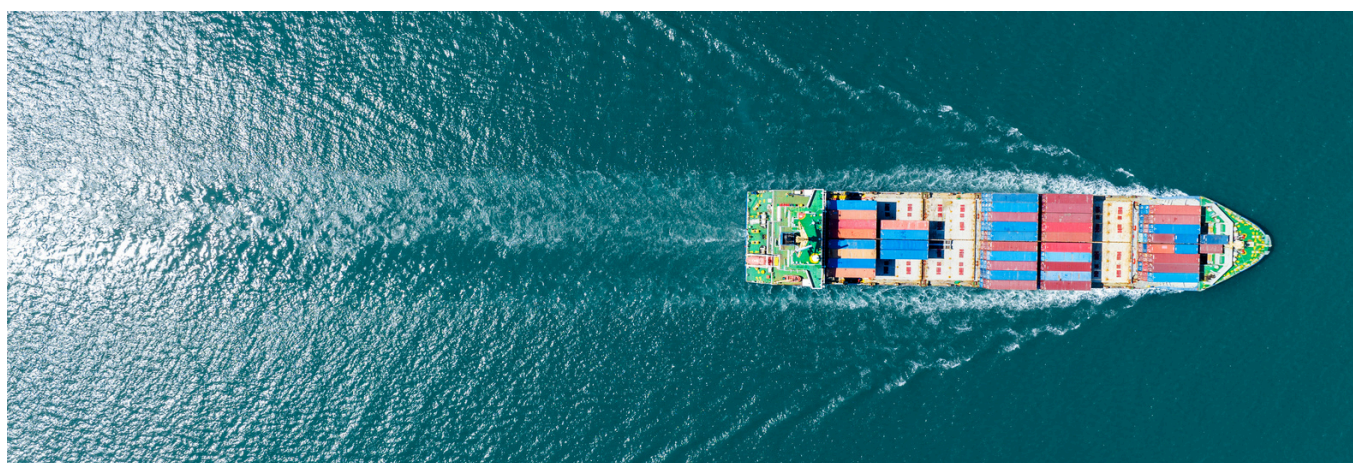
2 billion USD in investments per project, create over 4,000 direct jobs, and foster industrial hubs. To do so, collaborative efforts between governments and private entities must be enhanced, aiming to establish sustainable coastal policies and strengthen partnerships.

Professor Mori focused on climate adaptation in coastal areas, highlighting the severe impacts of tropical cyclones in Asia and the need for coastal resilience. He stressed that sea level rise, projected to increase by 50 to 100 cm by the end of the century, is a major concern. Accurate projections of extreme coastal water levels, including mean sea level, storm surges, and waves, are essential. He presented some examples of adaptation measures such as the construction of storm surge gates in Osaka that were developed by local engineers to prevent storm surges from reaching inland areas. New adaptation structures are being developed using Japan's climate projections. Professor Mori emphasised the importance of extreme ocean climate projections to enable effective coastal adaptation and the life-saving potential of ocean-related technology.

Taryn Laubenstein highlighted green shipping as a key mitigation pathway, noting that if shipping were a country, it would be the 8th largest global emitter. The Biden administration prioritises decarbonising the shipping sector and is working with the IMO to adopt a net-zero goal by 2050. The US and Norway launched the Green Shipping Challenge, leading to over 60 announcements and \$3 billion in investments at COP28. The US also partnered with Denmark on the Green Shipping Corridors Framework Initiative at COP27. At the national level, the US is investing up to \$7 billion in hydrogen hubs, with several projects

involving ports and energy. Offshore wind is another priority, with a target to reduce costs by 70% and deploy 30 gigawatts of offshore wind by 2030 and 15 gigawatts floating offshore wind by 2035. Updated regulations are expected to save the offshore wind industry \$1.9 billion over 20 years. And as a member of the Global Offshore Wind Alliance, the US aims to create policy frameworks for offshore wind markets. The US concluded by emphasising its Ocean Climate Action Plan, detailing ongoing and planned ocean-based mitigation and adaptation activities.

Dwikorita Karnawati emphasised the critical role of systematic observations in climate science, citing World Meteorological Organisation reports showing rapid increases in Earth's surface temperature, with 2023 being the warmest year on record. She highlighted that observations are essential for accurate climate adaptation and mitigation policies, and for tracking events like the marine heat waves caused by El Niño in 2020. Continuous temperature increases, identified through systematic observation, allow for better predictions of disasters like droughts and floods and help identify global ocean hotspots. She warned that without mitigating climate change, a food security crisis could occur by 2050, affecting over 500 million small-scale farmers. Indonesia's use of a 'digital twin' enhances observation networks, and improves data processing and dissemination, helping to integrate oceanic and atmospheric observations for more accurate climate impact assessments. She urged everyone to prioritise science-based action, emphasising that systematic observation is vital for effective policy-making and should be a key focus under the UNFCCC.



► PLENARY STATEMENTS ON WAYS FORWARD

Guiding questions:

- *How can the dialogue support Parties to deliver on the ocean-related language of the outcome of the first GST in their national action and strategies, including NDCs and NAPs ?*
- *What is needed to better integrate the ocean within existing mandates and work plans of the UNFCCC's relevant constituted bodies and work programs and promote synergies with other relevant UN and non-UN Initiatives and processes ?*

Participants expressed their appreciation and support for the Ocean and Climate Change Dialogue, which they hailed as a success, and noted the richness of discussions and examples. Many Parties thanked the co-facilitators and the secretariat for their efforts to convene the Dialogue, as an effective forum to advance ocean and climate issues both within the convention and beyond. Monaco, on behalf of the Environment Integrity Group, added that the Dialogue is becoming increasingly effective and efficient, offering a valuable space to discuss ocean solutions outside negotiation rooms. The United Kingdom also stressed the unique position and importance of the Dialogue, compared to other bodies and processes.

Many Parties welcomed the conclusions of the Global Stocktake. Australia was pleased with the reference to the Dialogue in the Ways Forward of the Decision, and Chile welcomed its ocean-climate nexus outcome that encourages countries to integrate the ocean and coastal blue carbon habitats into their NDCs for both mitigation and adaptation. Others stressed the need to strengthen the integration of the Dialogue in the stocktake process, including the technical assessment. Monaco, on behalf of the Environment Integrity Group, stated that governments are now responsible for the implementation of the Global Stocktake outcomes, noting that the Dialogue should support countries in strengthening further ocean-based climate action in their climate strategies – a call echoed by many Parties such as Indonesia and Fiji.

To deliver on this mandate, Parties shared several examples and case studies. Japan, for instance, presented its work on blue carbon ecosystems, and the resulting co-benefits for coastal development (e.g., fisheries, tourism). The Pacific Islands adopted the Unlocking Blue Pacific Prosperity Plan, aiming for a 100% sustainably managed ocean. The European Union, which is currently revising its NDC, shared some progress on ocean renewable energy, a pillar of

its energy transition, and measures to decarbonise maritime transport. Observers also highlighted a number of policy options. For example, Ocean Conservancy, on behalf of the Global Offshore Wind Alliance, stressed the importance of offshore wind and marine renewables as vital to achieve net-zero emissions and protect marine biodiversity, and encouraged donor countries to allocate specific concessional finance to support the feasibility of offshore wind deployment and other marine renewables in developing countries. Wetlands International, on behalf of the Global Mangrove Alliance, noted the importance of coastal wetlands and the use of monitoring tools, such as the [Global Mangrove Watch](#) and the [IPCC Wetlands Supplement](#), to inform national strategies. Wetlands International also invited Parties to join the [Mangrove Breakthrough](#).

Several participants addressed the topic of marine CDR (mCDR), highlighting the need for caution given the lack of scientific evidence on the impacts of geoengineering technologies on ocean ecosystems. RINGO called for the adoption of the precautionary approach, in line with existing obligations under other relevant frameworks. Indeed, as stressed by the eNGO group and the Climate Action Network in their intervention, mCDR is already addressed under the CBD, the London Convention, and the London Protocol. Moreover, to bridge existing knowledge gaps, Chile suggested encouraging the IPCC to assess the risk of related technologies in the context of its seventh assessment report.

The discussions underscored the critical need for significant financial resources, enhanced capacity-building and international cooperation to advance ocean-based climate action. Finance was repeatedly presented as a necessary factor to success, with calls to solidify the New Collective Quantified Goal on Finance. Ghana, on behalf of the African Group, stressed the importance of increasing financial flows from the North to the South to implement ocean-based solutions. The Climate Action Network recalled that carbon markets

do not constitute climate finance. Participants agreed on the need to extend partnerships and cooperation beyond the Dialogue to improve data and science, build capacity, and transfer technology – including monitoring systems. In that regard, Colombia advocated for transparent access to information on technologies for developing countries.

Many Parties stressed their immediate exposure to the coastal impacts of climate change, and the need to consider climate vulnerabilities when allocating financial resources. Fiji, on behalf of the AOSIS, called for targeted support for Small Island Developing States, including in the context of the operationalisation of the Loss and Damage Fund. Panama noted that it is the first country in Latin America to relocate an entire community to the mainland due to climate change. In response to these calls, Indonesia recalled that Article 9.4 of the Paris Agreement provides for the financial needs of developing countries “that are particularly vulnerable to the adverse effects of climate change and have significant capacity constraints.” In addition, several participants underscored the importance of human rights-based approaches and the inclusive engagement of Indigenous Peoples and local communities, especially to design and implement conservation

measures. In that regard, the Women Constituency stressed the need to also consider small-scale fishers, including fisherwomen, under this category, and to adopt human rights-based approaches. Furthermore, Palau and Australia called for the recognition of Indigenous and traditional knowledge and practices, which should be considered with other scientific approaches.

Overall, Dialogue participants agreed on the need for more cooperation and synergies within the UNFCCC and across frameworks, especially within the CBD’s Kunming-Montreal Global Biodiversity Framework, the BBNJ Agreement and the 2030 Agenda for Sustainable Development. Chile’s call for the rapid ratification of the BBNJ Agreement was echoed by several participants. Moreover, the European Union and the Environment Integrity Group also mentioned opportunities coming with the next UN Ocean Conference, which can act as a lever to accelerate ongoing processes. Perhaps Canada said it best during their statement from the floor: “if we collectively believe there is a need to better integrate the ocean across the UNFCCC’s work and promote synergies with other relevant bodies and processes, then it’s incumbent on all of us to keep driving that effort forward through consistent measures across all those relevant bodies.”

To conclude, participants suggested a number of ways forward:

- **A long-term vision.** Several participants advocated for a clear roadmap for the Dialogue including clear goals to be defined for the years ahead to progressively address a variety of solutions and continuously take stock of progress made and remaining gaps to fill. The Ocean & Climate Platform, for instance, suggested the adoption of a five-year plan, outlining clear objectives and priorities for collaboration moving forward.
- **A representative Dialogue.** Ghana, on behalf of the African Group, noted that the selection of panellists, and thus case studies presented in plenary, has not been balanced and proposed that future Dialogues ensure a regional representation in the selection of panellists. In addition, the US also encouraged further participation of other UN entities in the Dialogue.
- **Focused topics.** Canada pointed out that this year’s topics were broad and invited the co-facilitators to consider more focused topics in future Dialogues to facilitate concrete action as a result of discussion.
- **An action-oriented report should be presented at COP29.** Participants encouraged the co-facilitators to draft a report with actionable recommendations that focuses on best practices including case studies with practical examples to boost action, providing a toolbox of options for Parties.
- **Concrete recommendations.** Noting the need for more information and guidance to respond to the Global Stocktake, many Parties called for technical guidelines on how to include ocean-based climate measures in their climate strategies.

► CLOSING

The 2024 Dialogue was closed by **Cecilia Kinuthia-Njenga**, Director of the Intergovernmental Support and Collective Progress division at the UNFCCC Secretariat, and the co-facilitators, **Julio Cordano** and **Niall O’Dea**. Thanking participants for their active participation and insightful contributions, they appreciated the two days of very intense and rich discussions throughout the sessions. They described the Dialogue as a significant step forward. A summary report will be published in the coming months, and a meeting will be organised during the first week of COP29 to discuss its conclusions as well as next steps for the Dialogue.