

Conference Of the Parties (COP): Review on the topic ‘THE OCEAN’

ACBA 7007

**Strategic Management
for Conservation**



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1.0. Introduction

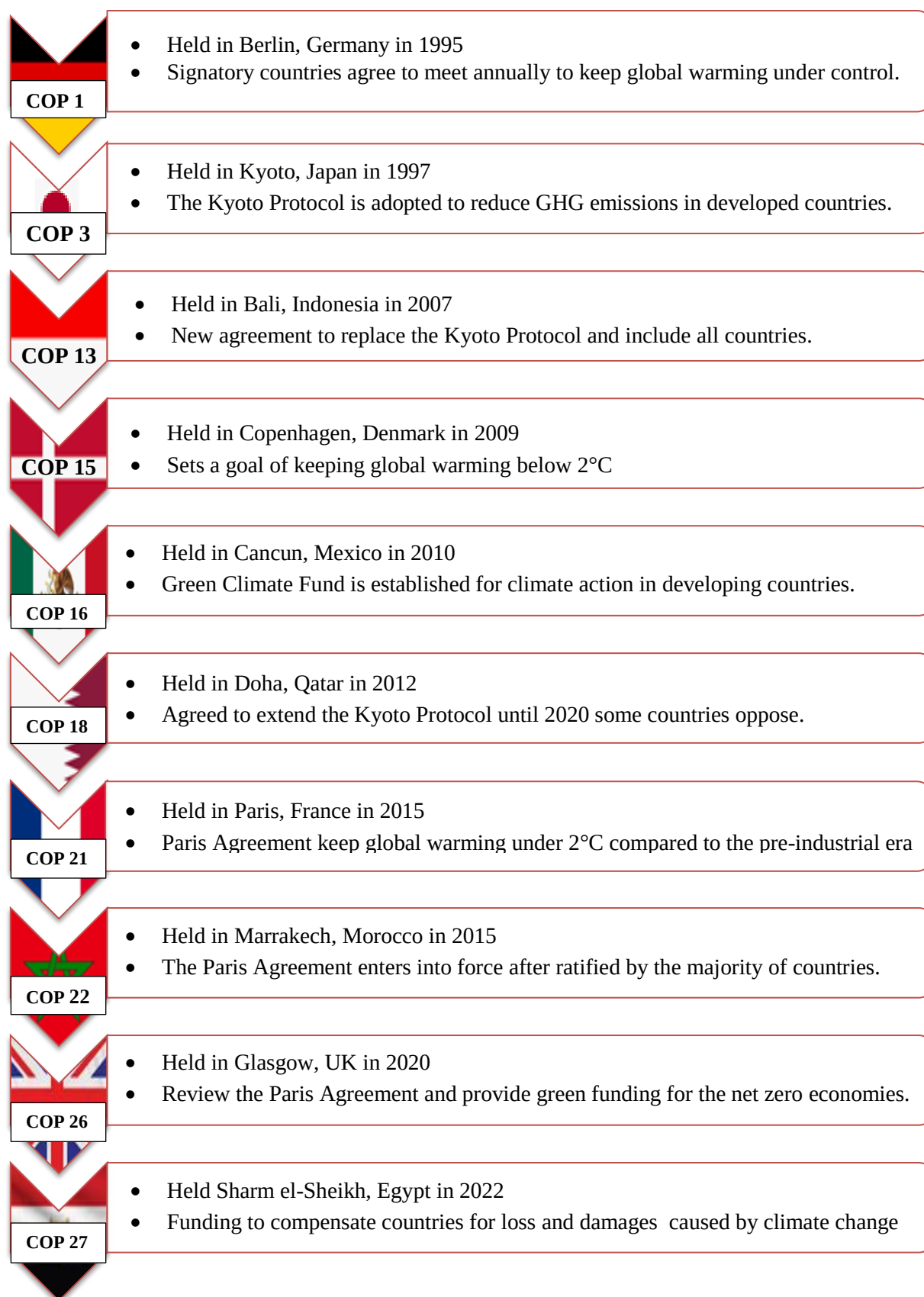
1.1. What is Conference of the Parties (COP)?

Since 1995, the United Nations has conducted a series of climate change conferences known as the Conference of the Parties, or COP. The acronym is combined with a number that indicates the edition to form the name of the COPs. These conferences aim to assess the actions implemented by parties of the United Nations Framework Convention on Climate Change (UNFCCC) to mitigate the effects of climate change. COP acts as the UNFCCC's major decision-making forum. Representatives from each of the nations that have signed on to the UNFCCC are incorporated in it. The main activities at COP meetings are discussions, and negotiations. COP can occasionally lead to the creation of new agreements and treaties, frequently to establish formal conventions, update goals, or adopt regulations.

The Rio de Janeiro Earth Summit in 1992 was a historic convention for sustainable development. That has emphasized three highly vulnerable environmental processes: climate change, biodiversity loss, and desertification. Each of the three versions of the UN environment conference has unique characteristics despite sharing similar goals. The COP on climate change is the most popular annual summit among the others. Almost two hundred countries are gathering for this climate meeting to discuss collaborative strategies. The signatories decided at the opening conference in Berlin in 1995 to meet once a year to continue keeping an eye on global warming and emphasize the need to reduce emissions of greenhouse gases. COPs have been organized in many places across Europe, America, Africa, and Asia since the inaugural event.

The Kyoto Protocol was approved in 1997 as part of COP 3 with the aim of reducing greenhouse gas emissions in industrialized countries. The Bali Roadmap, which was agreed upon at COP 13 in Bali, in 2007 included a schedule for Kyoto Protocol discussions for all countries, apart from developed ones. The goal of keeping global warming below 2°C was emphasized during COP 15 in 2009, and developed countries pledged to provide long-term funding for developing nations. According to this, the Green Climate Fund was established in 2010 under COP16 primarily for climate efforts in developing countries. The Kyoto Protocol was approved to be extended until 2020 at COP18, which was held in Doha in 2012. The extension was opposed by countries like the US, China, Russia, and Canada. After two decades of discussions, the Paris Agreement was unanimously approved in 2015 during the COP21 to maintain global warming below 2°C over pre-industrial levels and to pursue measures to keep it below 1.5 °C. Following its ratification by the majority of countries, the Paris Agreement entered into force in 2016 under COP 22. The 26th COP was held in Glasgow, UK in 2020 and it included reviewing the Paris Agreement and providing green funding for the net zero economies. A significant result of COP 27 hosted by Egypt in 2022 was the establishment of a fund to compensate countries for losses and damages imposed by climate change.

The major climate change milestones of the COPs are illustrated in the diagram below.



1.2. The Ocean and its Importance

The global ocean covers around 70% of Earth's surface, which has a total area of $3.61 \times 10^{14} \text{ km}^2$ with 40% of its area being in the northern hemisphere and 60% in the southern. The oceans have frequently been considered one of the world's most vital natural resources. Without this huge reservoir of open water, the entire planet would swiftly become a desert. The ocean is one of the world's most important repositories for biodiversity. It accounts for more than 90% of the planet's habitable space and is home to over 250,000 recognized species. It also supports an astounding diversity of species and ecosystems, most of which are still insufficiently recognized and unexplored (Borja et al., 2022). In addition to being home to a wide range of marine species, the oceans significantly improve the health of terrestrial animals.

The oceans are estimated to contribute around 35% of the planet's primary production (Costanza, 1999). Around half of the world's population depends on the ocean for their energy, income generation, and food. Around 50 % of the world's population primarily obtains their protein from seafood, while the ocean and its biodiversity contribute 15 % of the animal protein consumed by humans. The fishing and aquaculture sectors provide a source of income for millions of people, particularly low-income households, and contribute in a variety of ways to their prosperity. According to the study by Nunes and Ghermandi, (2013) around 61 % of the world's total gross domestic product comes from the ocean and the coastal areas within 100 km of the coastline.

Furthermore, according to the report of the Organization for Economic Cooperation and Development (OECD) in 2016, employment in the fishing and tourist sectors in ocean-based businesses is expected to reach 40 million worldwide by 2030. Coastal and marine tourism accounts for more than half of worldwide tourism and is the primary economic sector in many small islands and developing countries. The ocean, as a backdrop for activities such as diving, snorkeling, and whale and dolphin watching, produces considerable profits for target communities while also expanding nature lovers' travel experiences.

The oceans are the biggest storehouse for greenhouse gas CO_2 , absorbing around 40% of atmospheric CO_2 emissions each year and transferring them to the deep ocean reservoir through physical and biological processes (Reid et al., 2009). Through its ability to absorb carbon emissions and produce oxygen, the ocean helps to offset the pollution caused by non-renewable industries. As the world's greatest carbon sink, it helps mitigate the harmful effects of climate change in addition to acting as the planet's lungs by supplying oxygen. The ocean is the main component in regulating the earth's temperature because of its massive heat capacity, which makes it far more capable of storing heat than either land or air (Abraham *et al.*, 2022). Due to the ocean's capacity to absorb carbon dioxide and heat, the impacts of rising atmospheric concentrations of greenhouse gases have been significantly buffered or neutralised. The Intergovernmental Panel on Climate Change's (IPCC) Fifth Assessment Report, published in 2013, found that the ocean has absorbed more than 93% of the surplus heat from the emissions of greenhouse gases since the 1970s.

1.3. Threats to the Ocean

The effects of human activities on the coastal and marine environment have been recognized and investigated for many years. Initially, habitat loss was the most widespread and critical threat to the maritime environment. Marine habitat loss or destruction occurs when the marine environment or a specific ecosystem declines to the point that it cannot support the animal and plant species that would normally live there. This might be the result of direct change, such as mining, dredging, building, or aquaculture. It is also attributable to indirect factors such as ocean warming, acidification, pollution, and overfishing. As a consequence of habitat loss, these environments no longer provide ecosystem services, which are extremely important for the ecosystem, society, and the economy.

With industrialization, additional threats emerged such as pollution from toxins or fertilizers, overharvesting, invasive species, and disease. Human activities around coasts and further inland cause the vast majority of contaminants to enter the ocean. Ocean waste refers to any material dumped from boats, ships, or other modes of ocean transportation, whether unintentionally or on purpose. It also includes waste that enters channels and rivers that run into the sea, as well as trash generated by human settlement in coastal regions near the sea (Macías-Zamora, 2011). Fish are an essential component of a healthy marine ecology, but their numbers are still falling too quickly as a consequence of overfishing. According to the United Nations FAO's 2022 State of World Fisheries and Aquaculture (SOFIA) report, 35.4% of world fisheries have been exploited beyond the sustainable limits.

More recently, research has started to focus on the effects of widespread risk factors associated with global climate change, including rising sea levels, higher temperatures, ocean acidification, and UV exposure. The ocean's temperature has changed rapidly during the past few decades, along with an increase in heat storage. These changes have an impact on the seasonal fluctuations of the climate, heat transportation, ocean currents, stratification, biological processes, and biogeochemistry (Reid et al., 2009). Ocean warming reduces the quantity of oxygen dissolved in the ocean (deoxygenation) and causes sea-level rise due to the thermal expansion of seawater and continental glacier melting. Increasing ocean temperatures have an impact on marine species and ecosystems, resulting in coral bleaching and the loss of breeding habitats for marine fish and animals. Rising temperatures have led to ocean acidification (the fall in pH of the ocean), which affects marine animals and ecosystems. Rising ocean temperatures have an impact on the advantages that humans receive from the ocean, endangering food security, increasing disease prevalence, creating more extreme weather events, and reducing coastal protection. Climate change has a significant impact on fish availability and nutritional levels, particularly in East Asia, the Pacific, Central and West Africa, where people rely heavily on seafood (IPCC, 2019).

1.4. Global Concern to Ocean Protection

The crucial role that oceans play in controlling climate change and sustaining life on earth, especially concerning feedback processes, has not received sufficient attention in the past. In the 1960s, the environmental movement originated in the United States, with the beginnings encompassing early endeavors to safeguard coastlines and surf breaks. From the 1960s to 2010, several organizations possessed massive historical significance in ocean safeguarding. Some of those organizations include; Save Our Surf, Ocean Conservancy, Sea Shepherd, Surfers Against Sewage, Save the Waves, and Oceana. The UN Sustainable Development Goal (SDG) 14 "Life Below Water" emphasizes the need to protect marine biological resources from pollution and overexploitation under international policies. Sustainable ocean governance, especially coastal zones, is essential for regulating interactions between the ocean, society, and economy, and is a key component in reaching the SDGs (Lehmann *et al.*, 2021).

Integration of ocean concerns with climate policy is crucial and requires continuous attempts. Through the 2015 Paris Agreement, parties to the UNFCCC discussed the significance of safeguarding the ocean and its ecosystems. In the years before 2015, discussing climate change without addressing the ocean was like ignoring the core of the climate system. Over the past several years, Parties to the Paris Agreement have advocated for the official recognition of the Ocean-climate nexus in climate agreements and discussions. The UNFCCC's Conferences of the Parties (COPs) provide a chance for the international community to establish ambitious guidelines for protecting the ocean and coastlines from the effects of climate change. Five years after the Paris Agreement, progress and expectations have not kept pace with the signatories' goals. Then the Ocean and Climate Platform (OCP), which represents over 100 sea-related groups from across the world, is increasing awareness of the critical need to significantly cut greenhouse gas emissions and strengthen efforts to adapt coastal communities to rising sea levels.

2.0. Conference of the Parties (COPs) and Ocean topic

2.1. Previous COPs

Efforts to include the ocean in the UNFCCC's climate agenda started in the late 2000s. Since COP 15 in Copenhagen, ocean thematic days have been organized at UN Climate Change Conferences to promote the oceans agenda and develop collaboration in policies and programs across multiple levels. The UN Biodiversity Conference (COP15) prioritized reducing the impact of climate change and ocean acidification on biodiversity. At COP 21 in 2015, many states and non-state entities intentionally brought ocean-based solutions into the political debate as part of global climate change mitigation and adaptation plans. Following COP 21, interest in including the ocean into climate discussions increased.

In 2016, different countries requested the IPCC to create a Special Report on the Ocean and Cryosphere in a Changing Climate. The Marrakech COP (COP22) included oceans as one of thematic areas covered by the Marrakech Partnership for Global Climate Action. This partnership aims to support the implementation of the Paris Agreement by facilitating collaboration among governments, cities, regions, businesses, and civil society to address climate change. At COP 22, the Global Ocean Forum's regular 'Ocean Action Days' were transferred from the public 'green zone' to the official 'blue zone' location, providing enhanced exposure and closer access to key COP stakeholders (Dobush *et al.*, 2022). Furthermore, a multi-stakeholder initiative, which comprised governments, international organizations, NGOs, scientific institutions, and the commercial sector, established the "Roadmap to Oceans and Climate Action."

The oceans community, organized by "Friends of the Ocean" Parties and non-Party stakeholders, has made substantial progress in supporting the ocean issue at COPs (Miriam, 2020). At COP 23, Fiji's Presidency presented the 'Ocean Pathway' with the goals of boosting attention for the ocean inside the UNFCCC process and enhancing action in key sectors impacted by ocean and climate change.

2.2. COP 25

The UNFCCC COP 25 was held in December 2019, in Madrid, Spain bringing together government leaders and nations. This COP occurred promptly following the IPCC Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC). This is the last COP before the commencement of the COVID-19 pandemic, and it was labeled by its Chilean Presidency as the 'Blue COP', with the goals of developing political inspiration to 'oceanize' the climate discussion and address the ocean-climate nexus in a more effective manner (Guilloux, 2020). Over 100 ocean-related side events and press conferences were held at COP25, with subjects ranging from ocean-based solutions to fisheries, maritime transportation, maritime borders, ocean management, and governance of the ocean.

The Oceans Action Day at COP 25 was lasted two days (6-7 December 2019) and included the Marrakech partnership for global climate action oceans and coastal zones action event, Oceans action day, EU ocean day, UK pavilion events, and official UNFCCC COP 25 marine-related side events. Over 200 individuals from 31 nations attended the Oceans Action Day representing different governments. This discussion focused on the policy implications of the IPCC Special Reports on the Ocean and Cryosphere in a Changing Climate and Global Warming of 1.5°C, as well as potential policy alternatives in response. The Oceans Action Day highlighted the Roadmap to Oceans and Climate Action (ROCA) Initiative's 2019 Progress Report on Oceans and Climate. Additionally, the discussion emphasised the following important points:

- The significance of prioritizing rehabilitation of coastal and marine ecosystems, particularly in mangroves.

- Creating awareness and knowledge of the ocean-climate connection, recognizing nature-based solutions.
- The significance of investing in adaptation, emphasizing that mitigation is insufficient to avoid the climate issue.
- Opportunities to increase ocean activity in climate action efforts.
- To account for the importance of blue carbon, governments should include ecosystems in their greenhouse gas inventories.
- Ocean-thermal energy systems can reliably provide decarbonized electricity, highlighting the need for countries to transition to renewable energy.
- Importance of completely decarbonizing the shipping sector by 2050.

The first Ocean and Climate Change Dialogue was mandated by COP 25: Chile Madrid Time for Action 2019 (paras 30-31 and 33-34), and it took place in December 2020. This dialogue provided an opportunity for parties to explore strategies to increase adaptation and mitigation action on ocean and climate change, expanding on the knowledge and scientific findings from the IPCC Special Report on the Ocean and Cryosphere.

2.3. COP 26

After the Presidency named COP 25 in Madrid 2019 the 'Blue COP', there was an expectation that COP 26 in Glasgow, Scotland in November 2021 would incorporate the ocean into climate-related activity at all levels of the UNFCCC framework. This enthusiasm emerges from more than a decade of discussion on how to properly include the ocean-climate nexus in to the UNFCCC policy frameworks (Lennan and Morgera, 2022). Despite the challenges raised by the COVID-19 pandemic, motivation for including the ocean within the UNFCCC and Paris Agreement framework was maintained following COP 25 through an informal dialogue that took place in December 2020 at the request of the COP 25 Presidency. This discussion resulted in an informal summary report on strategies to increase adaptation and mitigation actions at the ocean-climate change interface.

Palau, in collaboration with the US State Department's Office of the Climate Envoy, proposed a 90-day challenge at COP 26 to come up with substantial projects for introduction at the seventh Our Ocean Conference (OOC) on February 16 and 17, 2022. The 90-day Challenge desires to build on the momentum created at COP 26 by implementing measures that line with the OOC's six areas of action: marine protected areas, sustainable blue economies, climate change, sustainable fisheries, marine pollution, and maritime security. The UK Presidency marked '**Ocean Action Day**' at COP 26 (5th November), urging for measures to conserve and restore ocean health and resilience. In COP 26, many countries including the UK agreed to support a new '**30 by 30**' target for protecting at least 30% of the world's oceans by 2030. Several countries signed the commitment, and more than 100 countries supported this goal.

The "**Great Blue Wall**" (GBW) strategy, adopted by the World Conservation Congress in 2021 and followed by being launched at COP 26, is a significant African-led attempt to create a nature-positive world. The initiative intends to create a network of 'seascapes' that will be recognized as IUCN Category VI protected areas (IUCN). Dr Bruno Oberle, the Director General of IUCN mentioned that "The Great Blue Wall is a model for building climate resilience and livelihoods as well as managing the sustainable use and restoration of marine ecosystems worldwide." The first seascape (the Tanga-Pemba Seascape) was launched during COP 26 in a concurrent event in Tanzania. These efforts show great promise and represent the first critical steps toward international collaboration to improve ocean preservation.

At COP26, many financial initiatives for ocean preservation and restoration were established. Belize along with the Nature Conservancy announced the signing of the largest debt-for-marine conservation agreement historically. The Blue Bond for Ocean Conservation enables Belize to receive debt relief in return for ocean protection. During a Blue Finance Roundtable, the Ocean Risk and Resilience Action Alliance (ORRAA) confirmed the launch of a new project to boost investment in nature-based solutions in coastal and marine areas. The Global Fund for Coral Reefs, PROBLUE, and the Fijian government were also granted funds during COP 26.

2.4. COP 27

In November 2022, the Government of the Arab Republic of Egypt hosted the 27th session of the UNFCCC, COP 27, to build on recent accomplishments and establish the way for future ambition to successfully address the global challenge of climate change. COP 27 strengthened ocean-based action under the process and encouraged parties to include ocean-based action, where appropriate, in their national climate objectives and implementation. The effort was reflected in the hosting of the **Ocean Pavilion**, which was made accessible by the leadership of over twenty scientific institutions and the preparation of almost 300 ocean-related activities. A number of declarations have also reinforced the importance of the ocean in the climate system and the need to recognize it as the greatest weapon in the battle against climate change. Some main announcements are as follows:

- France expressed its approval for the prohibition of seabed extraction.
- The Netherlands has established the **Champions Group for Deltas and Coastal Zones**, which aims to integrate efforts across nations to achieve sustainable delta and coastal zone management.
- **Mangrove Breakthrough**: a USD 4 billion investment aim to ensure the existence of 15 million hectares of mangroves globally by 2030.
- **"Race to Zero"**: Ten major shipping companies and green hydrogen producers have agreed to develop at least 5 million tons of green hydrogen by 2030.

From a blue perspective, the final agreement emphasized the importance of the ocean and strengthened the instructions for the annual Ocean-Climate Dialogue. During the opening session, Vladimir Ryabinin highlighted prospects for science-based action through the **UN Decade of Ocean Science for Sustainable Development**. YOUNGO's Ocean Voice Working Group emphasised the fundamental demands of their declaration, a **Global Blue New Deal**. Also, participants engaged in moderated panel discussions about two topics:

- 1) Strengthening and integrating national ocean climate action under the Paris Agreement; and
- 2) Facilitating ocean climate solutions and optimizing institutional relations.

Panelists emphasized four ocean-based climate solutions as Decarbonize the shipping sector, Create climate resilient fisheries and aquaculture, Protect and restore coastal and marine ecosystems and Scale up offshore renewable energy. The dialogue highlighted the need to protect indigenous peoples' livelihoods, rights, and local government systems when taking action on the ocean. Addressing the climate financing gap is crucial for developing nations to take action on ocean-climate issues, as pointed out in this event. Private and blended funding can help achieve ocean-climate goals, such as Blue Pacific Finance Hub, Blue Carbon Accelerator Fund (BCAF), Blue Natural Capital Financing Facility, and Ocean Risk and Resilience Action Alliance.

2.5. Key messages to the future COPs

Dave Reay, 2022, mentioned that the war in Ukraine, COVID-19, and the global cost of living crises all made a challenge to the COP 27 concentration on the climate change crisis. Beyond that, he highlighted that COP 27 appears to have been more about preventing backsliding on what was achieved at COP 26 in Glasgow a year ago, rather than achieving fresh and bolder ambition and action on cutting emissions. This means that only limited decisions on the scale, scope, quality, and access to funds were made during COP 27; hence, these concerns must be addressed at COP 28 before they can be operationalized. Also, parties will need to demonstrate considerably stronger political will at COP 28, which will assess their progress on climate action. The Ocean Dialogue 2022 concluded with a summary of important recommendations for future action as follows:

- Scaling up ocean-climate action under the UNFCCC requires addressing gaps in knowledge, funding, and technology.
- Collaborate on developing localized adaptation strategies that incorporate scientific, local, and indigenous knowledge.
- Collaborate on transdisciplinary research and promote mutual learning through ongoing monitoring and assessment projects.
- Address the barriers that restrict access to financing

- Develop policy and regulatory frameworks to promote the adoption and implementation of integrated adaptation solutions.
- Collaboration among governments, the business sector, philanthropic groups, and academics is crucial for innovative solutions.

Conclusion

The Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change is an annual conference of heads of state, negotiators, activists, diplomats, and lobbyists that has been held since 1995. At COPs, world politicians get together to collaborate on solutions to climate change. During these meetings, parties focus on a variety of issues. Among the other concerns, the ocean is one of the most significant topics, since it plays an essential part in climate control. Because of the ocean's ability to absorb carbon dioxide and heat, the effects of growing atmospheric greenhouse gas concentrations have been greatly mitigated. The critical role that oceans play in managing climate change and preserving life on Earth, has not concerned much attention in the past. The 2015 Paris Agreement brought together UNFCCC members to debate the importance of protecting the ocean and its ecosystems. Following that, only a few COPs have addressed the ocean subject to a limited extent. However, it wasn't until COP 25, that countries recognized the need to improve rapid awareness and action on ocean and climate change under the UNFCCC. COP 25 mandated the first Ocean and Climate Change dialogue, developing the knowledge and research findings from the IPCC. COP 26 and COP 27 strengthened ocean-based action under the process and encouraged Parties to include ocean-based action as appropriate in their national climate objectives. Some researchers and specialists stated that only limited decisions were made during these COPs on the ocean topic; therefore, this issue must be addressed more at future COPs.

References:

- Abraham, J., Cheng, L., Mann, M.E., Trenberth, K. and von Schuckmann, K., 2022. The ocean response to climate change guides both adaptation and mitigation efforts. *Atmospheric and Oceanic Science Letters*, 15(4), p.100221.

Available at: <https://www.sciencedirect.com/science/article/pii/S1674283422000964>

- Borja, A., Elliott, M., Basurko, O.C., Fernández Muerza, A., Micheli, F., Zimmermann, F. and Knowlton, N., 2022. # OceanOptimism: Balancing the Narrative About the Future of the Ocean. *Frontiers in Marine Science*, 9, p.886027.

Available at: <https://www.frontiersin.org/articles/10.3389/fmars.2022.886027/full>

- Costanza, R., 1999. The ecological, economic, and social importance of the oceans. *Ecological economics*, 31(2), pp.199-213.

Available at: <https://www.sciencedirect.com/science/article/pii/S0921800999000798>

- Dave Reay., 2022, Successes and failures of COP27, [Climatexchange.org.uk](https://climatexchange.org.uk)

Available at: <https://www.climatexchange.org.uk/successes-and-failures-of-cop27/#:~:text=A%20fund%20for%20loss%20and,of%20C%20is%20badly%20damaged.>

- Dobush, B.J., Gallo, N.D., Guerra, M., Guilloux, B., Holland, E., Seabrook, S. and Levin, L.A., 2022. A new way forward for ocean-climate policy as reflected in the UNFCCC Ocean and Climate Change Dialogue submissions. *Climate Policy*, 22(2), pp.254-271.

Available at: <https://www.tandfonline.com/doi/abs/10.1080/14693062.2021.1990004>

- Guilloux, B.G., 2020. Ocean and climate regime interactions. *Ocean Yearbook Online*, 34(1), pp.43-88.

Available at: https://brill.com/view/journals/ocyo/34/1/article-p43_4.xml

- Lehmann, I., Siebert, M., Högl, M. and Hornidge, A.K., 2021. Towards sustainable ocean governance: A call for blue climate action in international development (No. 22/2021). Briefing Paper.

Available at: <https://www.econstor.eu/handle/10419/247659>

- Lennan, M. and Morgera, E., 2022. The Glasgow Climate Conference (COP26). *The International Journal of Marine and Coastal Law*, 37(1), pp.137-151.

Available at: https://brill.com/view/journals/estu/37/1/article-p137_6.xml

- Miriam C. Balgos., 2020. OCEANS ACTION AT COP25
Available at: <https://rocainitiative.files.wordpress.com/2020/01/cop25-story-dec-22-2019-1-1-3.pdf>
- Macías-Zamora, J.V., 2011, January. Ocean pollution. In Waste (pp. 265-279). Academic Press.
Available at: <https://www.sciencedirect.com/science/article/pii/B9780123814753100191>
- Nunes, P.A. and Ghermandi, A., 2013. The economics of marine ecosystems: reconciling use and conservation of coastal and marine systems and the underlying natural capital. Environmental and Resource Economics, 56, pp.459-465.
Available at: <https://link.springer.com/article/10.1007/s10640-013-9732-1>
- Oberthur, S. and Ott, H., 1995. The First Conference of the Parties. Env'tl. Pol'y & L., 25, p.144.
Available at: https://heinonline.org/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/envpola25§ion=49
- Reid, P.C., Fischer, A.C., Lewis-Brown, E., Meredith, M.P., Sparrow, M., Andersson, A.J., Antia, A., Bates, N.R., Bathmann, U., Beaugrand, G. and Brix, H., 2009. Impacts of the oceans on climate change. Advances in marine biology, 56, pp.1-150.
Available at: <https://www.sciencedirect.com/science/article/pii/S0065288109560014>
- <https://ocean-climate.org/en/five-years-after-the-paris-agreement-the-ocean-and-climate-platform-warns-adaptation-to-sea-level-rise-is-urgent/>
- <https://www.sprep.org/news/90-day-challenge-for-our-ocean-conference-announced>
- <https://www.iucn.org/resources/brochure/great-blue-wall>
[initiative#:~:text=The%20%E2%80%9CGreat%20Blue%20Wall%E2%80%9D%20\(toward%20a%20nature%2Dpositive%20world.](https://www.iucn.org/resources/brochure/great-blue-wall#:~:text=The%20%E2%80%9CGreat%20Blue%20Wall%E2%80%9D%20(toward%20a%20nature%2Dpositive%20world.)