

Dear Delegates,

Welcome to the 2024 Diyafah International School Model United Nations (DISMUN). We are delighted to introduce you to the United Nations Environmental Assembly (UNEA).

Our topic for this conference entails the development of eco-friendly technology for the protection of oceans and seas.

As many of you know, the oceans and seas on our planet are vital to all life regardless of species or habitat. Therefore, it should be one of our utmost priorities to make sure that they remain clean, not only to sustain animal life, but also to guarantee good livelihoods for our future generations. At this conference, we will discuss ways of implementing environmentally friendly technology that ensures the safety of the oceans and seas.

This guide is meant to be an introduction to this committee's topics but should not be taken as a replacement for individual preparation and research. It should be used alongside delegates' previous research on their member state and its policies, and that of other Member States. Before the conference, each delegate is expected to use their research and submit a position paper. All information and guidance can be found on the [DISMUN Handbook](#).

We want to remind any delegates that any bias or harassment based on race, gender, national origin, age, religion, or disabilities has a zero-tolerance policy.

If you have any questions or queries, please contact:
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We wish you luck in your preparations and await to see you at the conference.

Sincerely,

Marwan Ahmed Moussa
Chair of the UNEA

Megan Josephine Madtha
Co-chair of the UNEA

I. Development of Eco-friendly Technology for the Protection of Oceans and Seas

“Oceans provide food, energy, water, jobs and economic benefits for people in every country – even those that are landlocked. They are a crucial buffer against climate change and a massive resource for sustainable development. The health of our oceans and seas is inextricably linked with the health of our planet and all life on earth. ... The truth is, the sea has a special relationship with all of us. It keeps us alive. But that relationship is now under threat as never before.”

Introduction

Oceans and seas “drive global systems that make the Earth habitable for humankind.” Covering three quarters of the Earth’s surface, oceans and seas are essential to sustainable development, poverty eradication, food security, and trade and transportation. Over three billion people depend directly on marine biodiversity for their livelihoods. As they supply oxygen and absorb carbon dioxide, oceans and seas are essential to mitigating the effects of climate change. Accordingly, the issue of preservation of our oceans and seas has achieved great prominence on the international community’s agenda, particularly after the adoption of the Sustainable Development Goals (SDGs), as SDG 14 is specifically on conservation and sustainable use of the oceans, seas, and marine resources. Organizations within the United Nations (UN) system, including the UN Environment Programme (UNEP), have therefore launched initiatives and projects designed to protect the oceans and seas, including by encouraging the development of technologies that will help with the protection and conservation of the oceans and seas. As defined in Agenda 21 (1992), eco-friendly or “environmentally sound” technologies “protect the environment, are less polluting, use all resources in a more sustainable manner, recycle more of their wastes and products, and handle residual wastes in a more acceptable manner than the technologies for which they were substitutes.” Agenda 21 further acknowledges that the availability, access, and transfer of technology “are essential requirements for sustainable development.” Advances in eco-friendly technology will be especially crucial for international efforts to protect the oceans and seas, which are subject to greater threats than ever before from both marine- and land- based human activities.

International and Regional Framework

The protection and preservation of marine environments is acknowledged in the United Nations Convention on the Law of the Sea (UNCLOS) (1982), which has been ratified by 168 States Parties. Article 192 expressly establishes that “states have the obligation to protect and preserve the marine environment.” UNCLOS can therefore be considered as one of the first international attempts to develop a control mechanism to protect and conserve oceans and seas. UNCLOS also addresses the development and transfer of marine technology. Article 266 provides that “states, directly or through competent international organizations, shall cooperate in accordance with their capabilities to promote actively the development and transfer of marine science and marine technology on fair and reasonable terms and conditions.”

The international community reaffirmed its commitment to the protection and preservation of oceans and seas through Agenda 21, which was adopted at the UN Conference on Environment and Development in 1992. Agenda 21 is a plan of action to which Member States committed to guide their activities towards sustainable development. Chapter 17 of Agenda 21 stresses the importance of the oceans and seas to sustainable development, as well as human dependence on oceans and seas: over half of the world's population lives in coastal areas. Agenda 21 also highlights the “need for favourable access to and transfer of environmentally sound technologies, in particular to developing countries, through supportive measures that promote technology cooperation and that should enable transfer of necessary technological know-how as well as building up of economic, technical, and managerial capabilities for the efficient use and further development of transferred technology.” At the UN Conference on Sustainable Development in 2012, Member States adopted The Future We Want, in which they reiterated their commitment to oceans and marine ecosystems, while also emphasizing “the need for cooperation in marine scientific research” and for “the transfer of technology” to assist developing countries.

Other international agreements point to the significance of the oceans and seas, as well as to the importance of technology for their protection. The Convention on Biological Diversity (1992) aims to protect all biological diversity, or biodiversity, defined as the “variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part.” It acknowledges that technology is essential to the protection of biodiversity, and it contains provisions on access to and transfer of technology (art. 16), exchange of information (art. 17), and technical and scientific cooperation (art. 18). Article 25 of the Convention establishes the Subsidiary Body on Scientific, Technical and Technological Advice to assist States Parties with implementation. The United Nations Framework Convention on Climate Change (UNFCCC) (1992) contains a commitment by States Parties to promote sustainable management, conservation, and enhancement of “sinks and reservoirs of all greenhouse gases,” including oceans, thus recognizing the important role that oceans and seas have in mitigating climate change. The Paris Agreement, adopted by the Conference of the Parties to the UNFCCC in 2015, reaffirms the need to protect oceans specifically and underlines “the importance of fully realizing technology development” to support efforts against climate change.

Role of the International System

Ever since its creation, UNEP has served as a global leader in environmental protection and conservation, including with respect to the oceans and seas. One of the oldest and most effective initiatives from UNEP regarding the conservation of oceans and seas is the Regional Seas Programme (RSP). Launched in 1974, the RSP aims to address threats to the world's oceans and coastal areas through the “shared seas” approach. This approach refers to plans of action and practices, supported by regional conventions, that are being collectively implemented by groups of countries in regions around the world. Other relevant UNEP programs include the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities

and the International Coral Reef Action Network. UNEP participates in UN-Oceans, an inter-agency mechanism that coordinates UN system activities related to oceans and seas. It also serves as co-coordinator of the Interagency Task Team on Science, Technology and Innovation for the SDGs, which forms part of the Technology Facilitation Mechanism that supports the implementation of the 2030 Agenda.

As the governing body of UNEP, the UN Environment Assembly (UNEA) regularly addresses the oceans and seas at its sessions. At its second session in 2016, UNEA adopted resolution 2/10 on “Oceans and seas,” which calls for “continued cooperation and coordination on marine issues among all relevant global and regional forums and organizations” for the achievement of SDG 14, as well as encouraging UNEP “to provide scientific support” to enhance understanding of “abrupt, accelerating or irreversible environmental changes,” including “thawing of the permafrost of the seabed and melting of sea ice and glaciers.” UNEA resolution 2/11 on “Marine plastic litter and microplastics” recognizes the role of “cost-effective technologies” and “automated and remote sensing technology” in efforts to reduce plastic debris in the marine environment.

The UN Conference to Support the Implementation of Sustainable Development Goal 14, also known as the Ocean Conference, took place from 5-9 June 2017 at UN Headquarters in New York. Throughout the conference, stakeholders discussed methods, techniques, and technologies that could lead humanity towards a sustainable usage of oceans and seas. The conference included seven partnership dialogues, one of which was focused on “increasing scientific knowledge, and developing research capacity and transfer of marine technology” in line with SDG target 14.a; participants included representatives from Member States, intergovernmental organizations, and non-governmental organizations (NGOs). The outcomes of the conference included a Call for Action, pursuant to which Member States committed “to act decisively and urgently” with the goal of “halting and reversing the decline in the health and productivity of our ocean and its ecosystems and to protecting and restoring its resilience and ecological integrity.” The Call for Action encouraged all stakeholders to take steps to implement SDG 14, including by investing in marine scientific research, ocean and coastal observation, and scientific and technological innovation.”

As demonstrated by the diverse participants at the Ocean Conference, the protection of oceans and seas is the responsibility not only of Member States, but also of non-governmental actors. The participation of civil society and the private sector is essential to the protection of oceans and seas, as well as to sustainable development overall. Examples include the work of the International Union for Conservation of Nature (IUCN), which includes both government and civil society organizations, is “the world’s largest and most diverse environmental network.” IUCN maintains a Global Marine and Polar Programme focused on protecting marine and polar ecosystems, promoting sustainable use of marine and polar resources, and building an international framework to conserve marine biodiversity. In December 2016, following a “keystone dialogue” between scientists and business representatives, eight of the world’s largest seafood companies decided to create the Seafood Business for Ocean Stewardship initiative. The companies intend to fulfil commitments to responsible ocean stewardship, including eliminating certain fishing practices

that jeopardize endangered species, engaging in science-based efforts to improve aquaculture, and investing in emerging approaches and technologies that support sustainable fisheries and aquaculture. Clean Seas, a UNEP-led campaign inaugurated in February 2017, aims to eliminate plastic debris in oceans and seas through a partnership between national governments; the private sector, especially companies that produce plastic litter; and civil society.

The Role of Technology in Protecting the Oceans and Seas

Oceans, seas, and marine resources are in jeopardy as a result of impacts from human activities. Climate change has proven particularly harmful: as oceans and seas absorb carbon dioxide, adverse consequences have included rising ocean temperatures, “ocean and coastal acidification, deoxygenation, sea-level rise, the decrease in polar ice coverage, coastal erosion and extreme weather events.” The declining health of oceans and seas is alarmingly visible in coral reefs, which are highly diverse ecosystems that are particularly vulnerable to changes in the environment. Many coral reefs have been subject to bleaching: as ocean temperatures and acidification increase, corals expel a type of algae on which they rely for energy and lose their bright colors in the process. If ocean conditions prevent the algae from returning, the corals eventually die. Other significant threats include marine pollution; marine litter; the introduction of non-native species; destructive fishing practices; overfishing; and illegal, unreported, and unregulated fishing.

Technology development therefore presents countless possibilities for furthering marine conservation, and in recent years, innovative breakthroughs in marine technology have resulted in new ways to protect oceans and seas. For example, advances in “satellite-interfacing sensors and data processing tools” are providing, for the first time, accurate information on ongoing activities in the world’s oceans and seas, thereby facilitating monitoring that could contribute to enforcement of international treaties and safeguarding of marine protected areas. Scientists and fishing companies are working together on high-tech nets that can target specific species of fish and cause less damage to sea beds. Numerous projects are focusing on marine pollution, including new technology designed to extract plastic debris from oceans via “an array of solid floating barriers and platforms anchored to the seabed” and operating solely on the strength of ocean currents.

Challenges and Opportunities for Technology Development

To protect oceans and seas, “policymakers and resource managers need to know about all of the ways it is used by both people and marine life.” Accurate information is also required to ensure the development of technology that effectively addresses threats to oceans and seas. However, “the ocean is still one of the least known areas of the world.” There are many gaps in knowledge and data about oceans and seas, especially with respect to “ecosystem processes and functions and their implications for ecosystem conservation and restoration, ecological limits, tipping points, socioecological resilience and ecosystem services,” as well as the impacts on biodiversity and ocean productivity. Knowledge and data that already exists is not always effectively disseminated: data systems are not always universally accessible, and data collection lacks standardization across regions.

Capacity-building

Relative gaps in capacity exist between developed countries and developing countries, particularly small island developing countries (SIDS) and least-developed countries.²⁸³ These gaps prevent developing countries from “taking advantage of what the ocean can offer them, as well as reduce their capability to address the factors that degrade the ocean.” Many international agreements stress the importance of providing assistance to developing countries with respect to technology, including by establishing favorable conditions for the transfer of technology; in the specific context of oceans and seas, UNCLOS mandates States Parties to “promote the development of the marine scientific and technological capacity of states which may need and request technical assistance in this field, particularly developing states.” Approaches to capacity-building include provision of targeted technical support, strengthening institutional capacity for research and development, creating accessible training centers for human resource development, and enhancing coordination through both North-South and South-South cooperation.

Partnerships

Although there are many partnerships focusing on technology related to oceans and seas, they may suffer from “limited effectiveness, lack of resources, fragmentation or duplication” and would benefit from review. Some partnership opportunities have not been fully explored: in particular, many stakeholders anticipate a greater role for the private sector, including through “partnerships with marine industries, including shipping, fishing, energy and other sectors,” which have access to data and platforms for further development of technology. Youth and entrepreneurs have made significant contributions to technology development that could have an enormous impact if made accessible to a wider audience through, for example, “governance structures [that] could help promote the open exchange of knowledge and technology.” There is also potential for new partnerships between “UN organizations and universities and research institutes.” Enhancing stakeholder engagement is crucial for the formation of effective partnerships; possible approaches could involve focusing on “ocean education and literacy” to raise “awareness of the issues facing the oceans through knowledge and innovation hubs and institutes.”

Conclusion

Oceans and seas are crucial to “human well-being and livelihoods”; yet, they face threats so severe that “delays in implementing solutions to the problems that have already been identified will lead to incurring greater environmental, social and economic costs.” Recent advances in technology have created opportunities for the international community to protect the oceans and seas, as well as to reverse damage that has already been done, but more work is required to fully realize the potential of technology for sustainable development. Achieving SDG 14 will require stakeholders to work together to foster development of eco-friendly technology that could help ensure the protection and conservation of oceans and seas for the benefit of current and future generations.

Further Research

How can UNEA help to create an environment that encourages the development of eco-friendly technology? In what ways can technology and innovation support both new and existing initiatives and programs to protect the oceans and seas? What barriers exist to technology development and how can UNEA address them? How can UNEA contribute to building partnerships for technology development? How can the international community advance the implementation of UNCLOS provisions related to development and transfer of marine technology? How can data collection and research capacity be improved? How can UNEA foster greater engagement and investment from civil society and the private sector in technology development?

Annotated Bibliography

Deep Sea Conservation Coalition. (2016). How Much Longer Will It Take?. Retrieved 6 June 2017 from: http://www.savethehighseas.org/publicdocs/DSCC-Review-2016_Launch-29-July.pdf

In 2002, the General Assembly started a period in which it approved several measures towards the conservation of oceans and sea life. General Assembly resolution 61/105, among others, called upon states to take actions regarding certain fishing techniques in waters beyond national jurisdiction in order to protect biodiversity and marine ecosystems. This is a report of the Deep Sea Conservation Coalition about the fulfilling of these actions.

United Nations Environment Programme. (n.d.). Global Programme of Action for the Protection of the Marine Environment from Land-based Activities: Overview [Website]. Retrieved 6 June 2017 from <http://www.unep.org/gpa/who-we-are/overview>

According to UNEP, 80% of total pollution in the oceans and seas originates from land-based activities, and almost all of that is human-caused. The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities mainly focuses its efforts on minimizing marine pollution caused by land-based activities by developing projects to stop the use of organic and radioactive pollutants, oils, and sewage. It is an important example of ongoing UNEP initiatives to protect the oceans and seas.

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