MITIGATING ENVIRONMENTAL IMPACTS OF WAR

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Introduction

Ongoing conflicts and wars around the world and across the globe have led to detrimental and destructive effects on the environment and human populations. Whether it is the war between states and groups such as Russia and Ukraine, Israel and Hamas, civil war in Syria, instability in Iraq, there is a consistency that wherever war happens, destruction ensues. The effects of war including the use of chemical weapons and artillery, looting of natural resources in order to support the war effort, intentional and impactful destruction of war opponents, have led to environmental damage and ultimately to collapse of many countries' infrastructures.[1] Environmental destruction as a result of war is significant as over 90 percent of the major armed conflicts between the years 1950 and 2000 took place within countries that had biodiversity hotspots, which are mostly where life grows and adapts.[2] The main issue is that the destruction caused by conflict creates pollution, deforestation, and soil erosion along with negatively impacting the food security and public health of the global population.[3] In addition, the environmental damage witnessed during these conflicts will continue to result in more destruction if steps are not taken to address it.

History

Wars have always had a severe impact on the environment. For example, in World War I, the first war in which chemical weapons were used, the German army used bottles filled with

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[1] Meaza, Hailemariam, et al. “Managing the Environmental Impacts of War: What Can Be Learned from Conflict-Vulnerable Communities?” Science of the Total Environment, vol. 927, 1 June 2024, p. 171974, www.sciencedirect.com/science/article/abs/pii/S004896972402117X, https://doi.org/10.1016/j.scitotenv.2024.171974. Accessed 25 May 2024.
[2] Anthes, Emily. “A “Silent Victim”: How Nature Becomes a Casualty of War.” The New York Times, 13 Apr. 2022, www.nytimes.com/2022/04/13/science/war-environmental-impact-ukraine.html.
[3] https://doi.org/10.1016/j.scitotenv.2024.171974. Accessed 25 May 2024.

180 tons of chlorine against their French and British opponents near the village of Langemark in the Flanders region of Belgium[4]. The toxic gas killed about 2,000 to 5,000 people and wounded 10,000.[5] Following World War I, chemical weapons would begin to soon make their way into military use by other states with the added ingredients of bromine, chlorine, or mustard gas. The use of chemical weapons continued after Germany's defeat in World War II when the Soviet Union dumped over 15,000 chemical weapons in the Baltic Sea.[6] According to researchers such as Professor Jack Beldowski of the Institute of Oceanology at the Polish Academy of Sciences, the mustard gas contained in these chemical weapons caused pollution into the ocean.

Chemical weapons have the ability to release harmful chemicals onto the environment and affect the health of individuals and other life such as fish and animals.

Present Day Conflicts Involved in Pollution, Food Insecurity, & Deforestation of the Environment

Numerous wars across the world are known to wreak havoc and cause mass chaos and destruction to the environment. In 2021 alone, there were about 54 states involved in conflicts globally.[7] The incidence of conflicts has increased with Russia's invasion of Ukraine, the attacks of October 7th worsening the war between Israel and Hamas, the continued use of chemical weapons in Syria[8], and many more. Not only are these conflicts the most impactful on the areas

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[4] "France's Untimely Chemical Weapons Problem." France 24, 12 Nov. 2013, www.france24.com/en/20131112-france%E2%80%99-untimely-chemical-weapons-problem-world-war-l-s yria. Accessed 1 Aug. 2024.

[5] "France's Untimely Chemical Weapons Problem." France 24, 12 Nov. 2013, www.france24.com/en/20131112-france%E2%80%99-untimely-chemical-weapons-problem-world-war-l-s yria. Accessed 1 Aug. 2024.

[6] "Chemical Weapons Dumped after World War II Are Polluting the Baltic Sea." Chemical & Engineering News, cen.acs.org/environment/pollution/Chemical-weapons-dumped-World-War/98/i37.

[7] Meaza, Hailemariam, et al. "Managing the Environmental Impacts of War: What Can Be Learned from Conflict-Vulnerable Communities?" Science of the Total Environment, vol. 927, 1 June 2024, p. 171974, www.sciencedirect.com/science/article/abs/pii/S004896972402117X , https://doi.org/10.1016/j.scitotenv.2024.171974. Accessed 25 May 2024.

[8] Human Rights Watch. "Death by Chemicals | the Syrian Government's Widespread and Systematic Use of Chemical Weapons." Human Rights Watch, May 2017, www.hrw.org/report/2017/05/01/death-chemicals/syrian-governments-widespread-and-systematic-use-ch emical-weapons.

in which the battles are in contestation right now, but there are also the conflicts that are causing the most destruction of the environment and the most damage to biodiversity.

In the Ukraine-Russia conflict, citizens fear that in East Ukraine, many hazardous industrial waste facilities that contain toxic remnants of war remain too close to the frontlines and will affect how they will live in the region. Toxic remnants of war (TRWs) are “any toxic or radiological substance resulting from military activities that forms a hazard to humans or ecosystems.”[9] TRWs are considered a widely known environmental threat as they were mostly used in substances such as Agent Orange that produced birth defects and disabilities. TRWs also created contamination of nuclear weapons testing and other mechanisms that affected the overall health of the environment. The Ukraine-Russia conflict is also affecting food security as both Russia and Ukraine are the world’s largest and most important suppliers of staple foods and fertilizers. Almost 50 countries across the world depend on these two countries for 30 percent of their wheat imports and 36 countries import over half of their wheat from either Ukraine or Russia.[10] Furthermore, the conflict has caused more than $56.4 billion in damage to the environment as 30% of Ukraine’s land has been infected with pollution, wildfires, deforestation, and chemical contamination of air, water, and soil.[11]

In the Israel-Hamas conflict, the environmental impact is even worse. According to Reuters, the Israeli-Hamas conflict has created unprecedented soil, water, and air pollution in the region.[12] Due to the carpet bombings which leave debris that is harmful and toxic, the water

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[9] IUCN, “A New Framework for Assisting Victims of Toxic Remnants of War.” Jan. 2021, www.iucn.org/news/world-commission-environmental-law/202101/a-new-framework-assisting-victims-toxic-remnants-war.

[10] UNFCCC, “Conflict and Climate.” 2023, unfccc.int/news/conflict-and-climate.

[11] Hryhorczuk, Daniel, et al. “The Environmental Health Impacts of Russia’s War on Ukraine.” Journal of Occupational Medicine & Toxicology, vol. 19, no. 1, 5 Jan. 2024, pp. 1–14, https://doi.org/10.1186/s12995-023-00398-y.

[12] Dickie, Gloria , and Alison Withers. “Hamas Conflict Has Caused Major Environmental Damage, UN Says.” Reuters, Reuters, 18 June. 2024, www.reuters.com/world/middle-east/Hamas-conflict-has-caused-major-environmental-damage-un-says-2 024-06-18/. Accessed 2 Aug. 2024.

sanitation systems are destroyed and have now been infected with high debris. 39 million tonnes of debris have been estimated to have been created as a result of the conflict.[13] Even prior to October 7th, the people in Gaza were struggling due to uncontrolled rapid growth, increasing population density, and unsustainable water systems. Now post-October 7th, the water sanitation systems have become completely defunct and water is not recommended for human consumption. Similarly, the Syrian conflict has caused detrimental effects on the environment with harmful chemical weapons such as mustard gas and chlorine having been used.[14] As with the world conflicts that are occurring today and will likely continue to last much longer, there needs to be a call to action to prevent these environmental disasters from festering during war as the planet as we know it may decline.

What has been done?

As this is a problem that needs to be addressed urgently, the United Nations has taken the lead in trying to mitigate the environmental damages caused by wars and conflict. The United Nations Environment Programme (UNEP) tackles environmental issues such as climate change and mitigation of war damages in conflict areas. In a resolution passed with a consensus on 4 August 2016, the UNEP aimed to implement protection of the environment in areas affected by armed conflict.[15] UNEP/EA.2/Res.15 expresses the deep concern over environmental damage during times of war and also recognizes the United Nations Environment Programme's significant work on environmental protections in providing help on detecting and mitigating environmental damage from conflicts. Resolution 15 also stresses the critical

[13] "Damage to Hamas Causing New Risks to Human Health and Long-Term Recovery - New UNEP Assessment." UN Environment, 18 June 2024, www.unep.org/news-and-stories/press-release/damage-Hamas-causing-new-risks-human-health-and-long-term-recovery.

[14] Qandeel, Mais, and Jamie Sommer. "Syria Conflict and Its Impact: A Legal and Environmental Perspective." Journal of International Humanitarian Legal Studies, 2 Dec. 2022, pp. 1–22, https://doi.org/10.1163/18781527-bja10057.

[15] United Nations Environment Programme, "UNEP/EA.2/Res.15." 2024, undocs.org/Home/Mobile?FinalSymbol=UNEP%2FEA.2%2FRes.15&Language=E&DeviceType=Desktop&LangRequested=False. Accessed 29 July 2024.

importance of saving the environment, emphasizes more international awareness when it comes to the environment, and urges Member States to take all necessary actions to ensure that there is a wide compliance to environmental regulations. [16]

On January 30 2018, the United Nations Environment Programme also passed Resolution 1, which aimed to implement policies to combat pollution, mitigation, and control in areas affected by armed conflict or terrorism.[17] Resolution 1 agreed to recognize that environmental protections and sustainable development highly contribute to the principle of human rights and the need to mitigate the negative effects of pollution in areas where there is an extremely vulnerable population such as children and those with disabilities. The resolution also heavily emphasizes the need to decrease pollution within areas where terrorism is either prevalent or is on the rise since that is where most likely bombings will occur. By widespread agreement of the threat pollution poses to the overall public health and well-being of people across the planet, this can help minimize and/or eliminate pollution during conflict for the long term.

The United Nations General Assembly, on December 19, 2022, passed a resolution aimed at taking note of draft principles that the International Law Commission presented to improve environmental protection in relations to armed conflict. However, to differentiate from the previous resolutions, /RES/77/104 applies the draft principles that the International Law Commission laid out and implemented encouraging states to bring more consideration into fostering solutions to mitigate environmental damage.[18] One of the principles that the resolution

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[16] United Nations Environment Assembly, “UNEA-2 | Resolution: Protection of the Environment in Areas Affected by Armed Conflict - CEOBS.” CEOBS, 4 Aug. 2016, ceobs.org/unea-2-resolution-protection-of-the-environment-in-areas-affected-by-armed-conflict/. Accessed 30 Sept. 2024.

[17] United Nations Environment Programme. "Resolution 3/1. Pollution Mitigation and Control in Areas affected by Armed Conflict or Terrorism - [UNEA Resolution UNEP/EA.3/Res.1]". Knowledge Repository - UNEP. UNEP. 2017. Web. 1 Aug 2024 <https://wedocs.unep.org/20.500.11822/30792>

[18] UN General Assembly, “A/RES/77/104” Undocs.org, 2024, https://documents.un.org/doc/undoc/gen/n22/741/64/pdf/n2274164.pdf

adopted was the designation of protected zones in which states have control over which areas of environmental land should be protected zones as a way of embedding cultural importance to the land in which the nation occupies. The resolution also adopts the principle of protecting the environment of indigenous people in which states can provide appropriate measures to make sure that indigenous people are not negatively impacted by armed conflict damaging their property. Prohibition of reprisals and pillage are added into the resolution to make sure these attacks and abuse of these natural resources are prevented.

In A/RES/56/4, the General Assembly declared the observance of International Day for Preventing the Exploitation of the Environment in War and Armed Conflict.[19] The purpose of the General Assembly establishing this day is to encourage Member States to refrain from the threat or use of force against their territory and declares November 6 every year to observe the prevention of exploitation of the environment in conflict and battle.

What further can be addressed

To mitigate and decrease the destruction of our planet with these conflicts, it is imperative that sufficient action is taken. First, to prevent environmental destruction from occurring in the first place, countries could regulate the kinds of weapons that can be used or reduce the scope of conflicts in general. For example, countries such as France, Ukraine, and Vietnam have implemented laws to make “ecocide” a crime and to criminalize severe environmental damage caused by weapons of war, with some penalties up to ten years of imprisonment.[20] This would bring Member States to acknowledge environmental harm to these foreign conflicts and decrease less destruction to the environment.

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[19] UN General Assembly, “A/RES/56/4” Undocs.org, 2024, https://documents.un.org/doc/undoc/gen/n01/475/24/pdf/n0147524.pdf

[20] Stop Ecocide International, “Existing Ecocide Laws.” Ecocide Law, ecocidelaw.com/existing-ecocide-laws/.

Second, the impact of wars and how they have tremendous damage to the environment can be drastically reduced. The International Law Commission's set of draft principles is a strong model and leads the way forward for Member States to follow in times of conflict. One of the methods that the draft principles advocate for are the prohibition of enhancements of environmental modification techniques in which states cannot use any techniques that could escalate or foster war.[21] This would mitigate environmental damage in wars and could prevent further conflict from escalating. However, while the International Law Commission's set of draft principles is a tremendous step to make sure Member States uphold environmental safety, there are some discrepancies that need to be addressed by member states. One of the discrepancies is the open to interpretation of principle 13 which explains that the use of methods and warfare are prohibited to prevent widespread and long-term damage. However, could there be the possibility of a legal status of interpretation in would this principle applies to nuclear weapons during the self-defense of states under attack during war?[22] This makes it important and necessary for Member States to follow the International Law of Commission's draft principles in that in principle 13 they make it national law to not use types of weapons, such as nuclear weapons and chemical weapons, that can significantly harm the environment. Third and lastly, steps could be taken to mitigate the environmental damage and protect zones designated as culturally important and/or where civilians live.

In conclusion, in order to mitigate the environmental impacts of war, we must continue the work and support the resolutions that the United Nations Environment Programme and General Assembly have passed. We must make it our goal to recognize that protecting the environment during war is an important issue and that there should be adequate and

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[21]"International Law Commission." United Nations, https://legal.un.org/ilc/texts/instruments/english/draft_articles/8_7_2022.pdfc

[22] Adamson, Liisi. "The ILC Draft Principles on Protection of the Environment in Armed Conflict - Lieber Institute West Point." Lieber Institute West Point, 4 Aug. 2022, lieber.westpoint.edu/ilc-protection-environment-armed-conflict/.

sustainable solutions. We must also support the International Law Commission's set of draft principles, which gives us a roadmap on how to uphold environmental standards between Member States. Harsher regulations against environmental damage such as polluting air, water and soil, deforestation and harming agricultural land during violent conflict could also be considered. Creating stronger rules around the use of more damaging weapons such as nuclear or chemical weapons could also be considered. If we take the action to save our environment, we will create a Planet Earth in which future generations are secure and space that is liveable for them to exist within.

QUESTIONS TO CONSIDER

1. Has your country been affected by environmental damage during conflict/war?
2. Has your country participated in a conflict/war that inflicted environmental damage?
3. What has your country done so far in terms of trying to mitigate environmental damage from conflict/war?
4. What initiatives/plans can be taken to gain more interest and awareness on the issue of the environmental damage due to conflict/war?
5. What accountability measures should be set in for states that refuse to follow the International Law of Commissions set of draft principles?

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United Nations General Assembly. 2024. “A/RES/77/104”, https://documents.un.org/doc/undoc/gen/n22/741/64/pdf/n2274164.pdf

MAINTAINING SUSTAINABLE FISHERIES

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Introduction

Oceans play a fundamental role in our daily lives by regulating climate, providing essential economic resources, and supporting diverse marine ecosystems. Fishing comprises a large portion of our global food consumption, provides economic stability, and secures livelihoods for millions of people. As a result, it is essential to ensure the preservation of marine life and maintaining the health of our planet for future generations. Over the past few decades, unsustainable practices and overfishing have threatened our ocean ecosystems, which has further caused the depletion of fish stocks and the disruption of communities dependent on them economically and for food sources. One critical issue affecting oceans is eutrophication, when an extensive amount of nutrients, like nitrogen and phosphorus, build up in coastal waters, causing harmful algae growth and disrupting marine ecosystems[23]. For example, 78% of U.S. coastal waters and 65% of Europe's coastal waters have shown signs of eutrophication disrupting the balance of marine life[24]. Other ocean-threatening issues are acidification, warming, plastic pollution, and overfishing. These issues have overwhelmed our oceans and are negatively impacting access to resources. The depletion of marine biodiversity is expected to worsen over time.

[23] US Department of Commerce, N. O. and A. A. (2009a, September 1). What is nutrient pollution?. NOAA's National Ocean Service. https://oceanservice.noaa.gov/facts/nutpollution.html#:~:text=This%20process%20is%20also%20known,and%20seagrass%20die%2C%20they%20decay .

[24] Malone, T. C., & Newton, A. (2020, July 22). The globalization of cultural eutrophication in the coastal ocean: Causes and consequences. Frontiers in Marine Science. https://www.frontiersin.org/articles/10.3389/fmars.2020.00670/full

Environmental degradation and over-consumerism

Environmental degradation and overconsumption globally have significantly contributed to the deterioration of our oceans such as pollution, climate change, and the depletion of marine resources. The Mediterranean and Black Sea regions highlight the global crisis, with 88% of assessed fish stocks found to be overfished[25]. Furthermore, nearly a quarter of human-generated carbon dioxide (CO2) emissions have been absorbed by oceans, resulting in ocean acidification, or a decrease in pH levels of the seawater.[26] This has caused fisheries to modify their industry services globally. The ocean absorbs a great amount of heat from greenhouse gas emissions, causing rising sea temperatures that severely contribute to coral bleaching, marine heatwaves, and ultimately disrupting global fisheries and systematic economies.[27] In addition, plastic pollution has become a progressively common denominator for this issue. Approximately, 5 to 12 million metric tons of plastic enter the ocean annually, resulting in an estimated cost of $13 billion per year in financial losses in fisheries and clean-up efforts.[28] These combined factors highlight the urgent need for comprehensive global action to address these environmental threats that face our oceans and to safeguard the ecosystems and economies reliant on them.

Illegal, Unreported and Unregulated fishing

Illegal, unreported, and unregulated (IUU) fishing is a global problem that violates both national and international fishing regulations. This practice includes unregulated fishing and

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[25]Overfishing. Oceanomare Delphis. (n.d.). https://oceanomaredelphis.org/en/overfishing/#:~:text=Almost%2080%25%20of%20the%20world%E2%80%99s,and%20swordfish%2C%20have%20already%20disappeared

[26] Ocean acidification. European Environment Agency's home page. (n.d.). https://www.eea.europa.eu/en/analysis/indicators/ocean-acidification#:~:text=Ocean%20acidification%20 has%20increased%20rapidly,1985%20to%208.05%20in%202021

[27] Office, U. S. G. A. (2024, July 16). Ocean warming is one of the Big Climate Change Question marks. U.S. GAO. https://www.gao.gov/blog/ocean-warming-one-big-climate-change-question-marks#:~:text=Marine%20heatwaves%20can%20stress%20and,fisheries%20for%20food%20and%20jobs

[28] United Nations. (n.d.). Oceans - United Nations Sustainable Development. United Nations. https://www.un.org/sustainabledevelopment/oceans/

vessels in restricted areas, misreporting catches, and small-scale vessels straying across neighboring international borders, which all contribute to the depletion of marine biodiversity and ecosystems. National Oceanic and Atmospheric Administration (NOAA) Fisheries highlights that 1 in 5 fish caught comes from IUU fishing[29]. There have been multiple cases of IUU fishing globally. This issue is particularly evident in West Africa, where a significant portion of the fish caught comes from illegal fishing which has exacerbated West Africa's food insecurity. Nearly 80% of the world's fishery resources have been "fully exploited, overexploited, or depleted", with 90% of large predatory fish stocks (such as sharks, tuna, swordfish, etc) already gone[30]. For example, Ghana has experienced a recent decline in average annual income per artisanal canoe by 40% over the past 15 years[31]. In another example, since February 2023, the Philippines has accused China of unsafe actions on at least 12 occasions, such as China's Shoal, entering their bordering Exclusive Economic Zone (EEZ)[32], leaving high tensions between the two countries.

An Exclusive Economic Zone (EEZ) is a sea area near a country's coast where the country has special rights to fish, drill, and conduct other state activities. These cases of IUU fishing not only threaten marine biodiversity but also exacerbate economic instability and international tensions, demonstrating the urgent need for stronger worldwide cooperation and enforcement to protect ocean resources. Addressing these severe global challenges such as coastal eutrophication, ocean acidification, ocean warming, plastic pollution, and overfishing requires urgent action.

[29]Fisheries, N. (n.d.). Understanding illegal, unreported, and unregulated fishing. https://www.fisheries.noaa.gov/insight/understanding-illegal-unreported-and-unregulated-fishing#:~:text=How%20does%20IUU%20fishing%20affect,and%20abroad%20at%20a%20disadvantage

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Bold action is required to restore our ocean's health, preserve marine biodiversity, and safeguard the livelihoods that are dependent on these vital resources.

What has been done?

To understand the global efforts in managing sustainable fisheries and mitigating the effects of environmental degradation, it is crucial to examine the initiatives and actions taken by the United Nations and various states, all committed to preserving marine resources and ensuring the long-term viability of fishery practices. The United Nations Convention on the Law of the Sea (UNCLOS)[33] aims to safeguard the preservation and sustainable management of oceans and marine resources. Adopted in 1982, UNCLOS established a comprehensive legal framework for all maritime activities, territorial boundaries and resource management. Although 169 states have ratified the Convention, the United States has yet to join the treaty, which has caused global concerns. In addition to regulating the use of seas and oceans, UNCLOS also founded key institutions such as the International Seabed Authority and set global standards for territorial waters and exclusive economic zones (EEZs). In 1996, the United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks adopted the Fish Stocks Agreement (UNFSA).[34] The agreement focuses on the sustainable management of transboundary fish stocks, emphasizing a precautionary approach and scientific data to ensure long-term sustainability, outlined in the United Nations Convention on the Law of the Sea.

To address the challenges posed by increases in illegal, unreported, and unregulated (IUU) fishing, the Food and Agriculture Organization (FAO) adopted the Code of Conduct for Responsible Fisheries (CCRF)[35] in 1995. The CCRF sets international standards for responsible

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[33] Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397, https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf

[34] United Nations. (n.d.-d). *UNFSA Overview | Division for Ocean Affairs and the law of the sea*. United Nations. https://www.un.org/oceancapacity/unfsa

[35] Code of conduct for responsible fisheries | illegal, unreported and unregulated (IUU) fishing | Food and Agriculture Organization of the United Nations. (n.d.-a). https://www.fao.org/iuu-fishing/international-framework/code-of-conduct-for-responsible-fisheries/en/

practices to ensure the effective preservation, management, and development of aquatic resources and ecosystems. The CCRF highlights the global crisis of overfishing and IUU fishing, noting that “two-thirds of the world’s fish stocks are either fully exploited or overfished.”[36] Additionally, the 2009 Agreement on Port State Measures to Prevent, Deter, and Eliminate Illegal, Unreported, and Unregulated Fishing[37] (PSMA) established a binding international treaty. This agreement prevents vessels involved in IUU fishing from using ports or landing their catches, thereby protecting international industries and coastal economies from the harmful effects of illegal fishing activities. These collective international actions showcase the united determination to safeguard marine ecosystems and ensure sustainable fisheries for future generations. To understand the global efforts in managing sustainable fisheries and mitigating the effects of environmental degradation, it is essential to understand the global solutions that were created to mitigate these issues.

In 2015, the United Nations adopted the 2030 Agenda for Sustainable Development[38] and 17 Sustainable Development Goals (SDGs). These goals outline the urgency to address global challenges such as climate change, poverty, hunger, and disease. The Sustainable Development Goals (SDGs), particularly Goal 14: Life Below Water, directly addresses the issue of maintaining sustainable fisheries by promoting the preservation and sustainable use of ocean resources. Ultimately, SDG 14 highlights that oceans are vital, ultimately emphasizing safe and protected sustainable practices to support long-term environmental health for global

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[36] Decreasing fish stocks. WWF. (n.d.). https://wwf.panda.org/discover/knowledge_hub/endangered_species/cetaceans/threats/fishstocks/#:~:text=Two%2Dthirds%20of%20the%20world%E2%80%99s,used%2C%

[37] Food and Agriculture Organization. (1970, January 1). Agreement on Port State Measures to prevent, deter and eliminate illegal, unreported and unregulated fishing. revised edition. Knowledge Repository. https://openknowledge.fao.org/items/57e5d311-794b-438e-a193-f8fed283c1a8

[38] United Nations General Assembly. (2015). Transforming our world: the 2030 Agenda for Sustainable Development, A/RES/70/1. https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf

communities and future generations. Through SDG 14 the international community made a commitment to “significantly reduce marine pollution of all kinds” such as nutrient pollution, marine debris, and land-based activities by 2025.[39] To assist in achieving this goal, the United Nations Fisheries Language for Universal Exchange (UN/FLUX) collects and shares information on fishing activities, vessel details, and trip identification.

While SDG 14 focuses solely on life below water, other SDGs also address and highlight the importance of marine life. SDGs 2, 8, 12, 14, and 17, all emphasize the importance of maintaining sustainable fisheries and overall marine and ocean health, while ensuring the stability of international socio-economic communities. Further, the commitment to SDG 14 and the effort to commit to the protection and sustainability of oceans requires integrating actions across other Sustainable Development Goals, such as SDG 12 - global consumption, SDG 8 - economic growth, SDG 2 - food security, and lastly SDG 17 - global partnerships to create a comprehensive approach to sustainability and resilience for our oceans. The Food and Agriculture Organization (FAO), “has projected that 70% of the fish population is fully used, overused or in crisis.”[40] SDG 2 emphasizes that sustainable fishing practices are fundamental to ensuring food security and improved nutrition for all, especially undeveloped countries.

Malaysia exemplifies how climate change and overfishing can severely impact the socio-economic conditions of a country, highlighting the relevance of Sustainable Development Goal 8. As climate change increases and overfishing depletes fish stocks, Malaysia faces rising fish prices and a decline in fisheries-related employment, affecting both food security and economic stability[41]. SDG 8, which focuses on "decent work and economic growth," showcases

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[39]United Nations. (n.d.-a). Goal 14 | Department of Economic and Social Affairs. United Nations. https://sdgs.un.org/goals/goal14#:~:text=Goal%2014.,portions%20of%20the%20world’s%20oceans

[40]World Wildlife Federation (n.d.), Decreasing fish stocks. https://wwf.panda.org/discover/knowledge_hub/endangered_species/cetaceans/threats/fishstocks/#:~:text=Two%2Dthirds%20of%20the%20world%E2%80%99s,used%2C%20overused%20or%20in%20crisis

[41] Bedi, R. S., Telegra. (n.d.). In Focus: Falling Fish Catch in Malaysia spells trouble for industry, region; highlights need for sustainable practices. CNA.

the critical connection between environmental degradation and the livelihoods of those dependent on these fisheries, emphasizing the urgent need to address these challenges to protect both the economy and job opportunities in affected communities. SDG 12 seeks to "ensure sustainable consumption and production patterns," addressing the need to minimize pollution and maintain sustainable fishing practices. Lastly, SDG 17 stresses the importance of global cooperation and partnership, such as adherence to international agreements such as the Law of the Sea, in order to tackle these environmental challenges. These multifaceted challenges can only be effectively tackled with global cooperation, as it will ensure our actions and choices leave a positive impact for the future.

In 2017, the UN General Assembly adopted resolution A/RES/71/312, "Our Ocean, our future: call for action," emphasizing the urgency of the mobilization of marine resources to support sustainable ocean management, especially in developing countries. In "Protection of the marine environment from land-based activities" (EA.4/Res.11),[42] the United Nations Environment Assembly urges the international community to protect marine environments from land-based pollution such as wastewater, nutrients, and marine litter. The resolution calls for immediate action to conserve vital ecosystems that align with SDG 14 and worldwide efforts. UN General Assembly resolution A/RES/77/242 (2022) calls for a high-level international conference in June 2025, aimed at addressing the ongoing implementation and commitment of Sustainable Goal 14.[43] Additionally, the 2023 Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of

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https://www.channelnewsasia.com/asia/malaysia-fishing-industry-fishermen-food-climate-change-sustainability-4056331

[42] United Nations Environment Assembly. (2019) Protection of the marine environment from land-based activities. UNEP/EA.4/RES.11 https://undocs.org/UNEP/EA.4/Res.11

[43] United Nations General Assembly. (2022) 2025 United Nations Conference to Support the Implementation of Sustainable Development Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development. A/RES/77/242 https://www.undocs.org/Home/Mobile?FinalSymbol=A%2FRES%2F77%2F242&Language=E&DeviceType=Desktop&LangRequested=False

Areas beyond National Jurisdiction (BBNJ Agreement)[44] focuses on the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction. It addresses issues such as marine genetic resources, ocean management, and impact assessments to establish a funding mechanism and institutional arrangements. This agreement will be open for signatures until September 2025 and will be implemented after 60 states have ratified it.

Another key intergovernmental organization, The Secretariat of the Pacific Regional Environment Programme (SPREP)[45] was established in 1993 in promoting environmental governing in the Pacific region. SREP plays an essential role in promoting sustainable development and environmental governance by working closely with various stakeholders to safeguard the region's natural resources through technical advice and coordinated regional responses regarding climate change, waste management, and biodiversity protection.

What now?

In order to address these critical issues such as coastal eutrophication, ocean acidification, ocean warming, plastic pollution, and overfishing, it is essential to develop and implement rigorous policies and initiatives to restore our ocean's health and conserve marine biodiversity. Policy development needs to include enhancing worldwide regulations for fishing practices, improving waste management to reduce water pollution, expanding Marine Protected Areas (MPAs) and safeguarding Exclusive Economic Zones (EEZ). Ultimately, it is crucial to enforce international cooperation on such agreements and initiatives like Code of Conduct for Responsible Fisheries (CCRF) and the Agreement on Port State Measures (PSMA). Additionally, to expand initiatives that promote the adoption of advanced technologies for sustainable fishing

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[44] United Nations. (n.d.-a). BBNJ Agreement | Agreement on marine biodiversity of areas beyond National Jurisdiction. United Nations. https://www.un.org/bbnjagreement/en

[45] United Nations Environment Program, (n.d.). Secretariat of the Pacific Regional Environment Programme
(SPREP convention).
https://www.unep.org/secretariat-pacific-regional-environment-programme-sprep-convention#:~:text=Pacific%20habitats%20and%20species%20face,with%20the%20impacts%20of%20higher

and marine monitoring such as United Nations Fisheries Language for Universal Exchange (UN/FLUX), as it provides critical information on fisheries and the protection of bordering nations.

In order to make a difference and preserve our marine and ocean health, we must integrate the Sustainable Development Goals across the entirety of our global actions. These pressing challenges of overconsumption from overfishing and environmental degradation, highlights the urgent need to address these issues collectively. Our unified global commitment and dedication to the Sustainable Development Goals, demonstrate the support towards sustainable management of fishing practices, the preservation of marine biodiversity, and the protection of our viable ocean resources. It is imperative that we take action now, by integrating collective efforts and safeguarding our invaluable ocean resources for future generations.

QUESTIONS TO CONSIDER

1. How have climate change and ocean warming affected fish stocks in your country, and what adaptation strategies have been implemented?
2. How can countries ensure equitable access to marine resources while maintaining sustainability?
3. What best practices can be shared among countries to improve enforcement of fishing regulations and reduce IUU fishing?
4. How can member states prevent international conflicts and overfishing in shared marine areas according to Exclusive Economic Zones (EEZs)?
5. What policy measures can be implemented to protect ocean resources from Illegal, Unreported, and Unregulated (IUU) fishing, in compliance with international fishing regulations?
6. What are certain strategies that can be developed to mitigate ocean pollution and further develop waste management?
7. What new technologies can be enhanced to improvise and improve fishery data sharing and build transparency?
8. What policies can be implemented that would ensure that the 2030 Agenda for Sustainable Development and 17 Sustainable Development Goals (SDGs) are effectively integrated globally?

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