Forum: Sustainable Development Committee I

Issue: Methods to protect oceans from overexploitation

Student Officer: Christophe Cannon

Position: Deputy President Sustainable Development Committee I

Introduction

The oceans are one of the great resources of the world: simultaneously one of the greatly exploited natural resources of the world. The main danger the oceans face comes from its exploitation. One such exploitation is Its use as a dumping ground for plastic and other garbage. In the Pacific Ocean, an island of plastic exists. Plastics also cause irreversible damage to the natural ecosystems and can harm the creatures that live in such an environment. Plastics however are by no means the only human action that damages and overexploits the oceans ecosystems. Some other actions that are detrimental to the oceans' health are actions such as overfishing. This can drastically change the food chain in some oceans, leading to large fluctuations in the numbers of different species that are also able to damage the ecosystems. Furthermore, actions such as trawl fishing can destroy ocean beds and natural ecosystems. Which once again damages the food change in local ecosystems by depriving many species of fish, their food. But also can capture many unintended aquatic species apart from the desired fish and potentially killing larger fish through strangulation or by suffocation in these nets. But the most detrimental fishing practice is blast fishing; This immediately kills any living organism in the area and can turn coral reefs

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into what would be considered an oceanic wasteland. A prominent example is the destroyed coral reefs in Sri Lanka's waters. SDG 14 sees this as an exploit of the oceans that needs to be fixed through human intervention and removing the practice through some measure. Furthermore, it should be worth noting that both blast fishing and trawling practices can damage the tourism industry of neighbouring cities and the nation-state they lie within by depriving them of beautiful natural sites, which may be a more reliable long-term income. One other form of ocean exploitation is the sound exploitation of the ocean with the increased amount of noise created by the many human ships and submarines in the oceans; Using radar, sonar, offshore construction, bomb fishing or any other loud sound-producing activity. Particularly radar and sonar due to their similarity to whale song making communication difficult These sounds can make whale song and any other similar communication methods useless or can send fake messages by accident to whales and more. Sonar to marine life communications can cause them to flee potentially safe areas. Or particularly dangerous for whale pups to end up following submarines instead of family. Causing adorable and vital whale pups to die from starvation. Deep-sea mining could show immense economic potential, with seabed resources valued at around $20 trillion. But, it poses severe environmental risks, including biodiversity loss and habitat destruction. Slurry and pollution pose significant environmental risks as well as risks to the species immediately around the mined areas. These methods of ocean exploitation as well as others can damage one of the most valuable and largest ecosystems on the planet. Threatening to speed up the effects of climate change by destroying a vital carbon sink.

Definition of Key Terms

SDG 14

The sustainable development goal focused on life below water. Particularly, "Conserve and sustainably use the oceans, seas and marine resources for sustainable development. This SDG aims to prioritise conserving marine ecosystems, which are a vital carbon sink for Climate change. SDG 14 promotes sustainable fishing practices, underwater mining practices and prevent oceanic acidification.

Bomb Fishing

A fishing practice banned in most areas of the world, characterised by its simple approach to collecting fish. An explosive charge is paced, or thrown into, the water and detonated from a safe distance. The shock wave in the water collapses and rapidly expands the lungs of the creature, instantly killing it and anything in the vicinity of the explosion. Anything killed in the explosion quickly comes to the surface and can be collected by the bomb fishers. This practice cannot fish for a specific type of fish and decimates high-density ecosystems such as coral reefs or other dense marine habitats. It is often used illegally to

gather large numbers of fish quickly.

Trawl Fishing

Another fishing practice that damages the ocean by its use. In this fishing method, an extremely large net with weights is thrown into the ocean and dragged along the ocean floor, capturing any fish or other marine creatures in the net. Then the net is removed from the water and the fish are collected. This process is often done between 2 different ships to increase the amount of area the net can cover; This often captures extra fish and animals and can damage the ocean floor in shallow areas where the net hits the ocean floor.

Overfishing

“Overfishing occurs when too many fish in a particular stock are caught and there are not enough adults to breed and sustain a healthy population.

The level of overfishing has been increasing in recent decades, and the number of overfished stocks is now three times higher than in 1970. The United Nations Food and Agriculture organisation monitors over 500 fish stocks around the globe. In 2024, it is estimated that over 37% of these fish stocks were overfished.

For communities reliant on fishing, the impact of stock collapses can be devastating. Overfishing is also a concern for the wild marine environment, as it is one of the major causes of the loss of ocean biodiversity.” (What Is Overfishing)

Plastic Pollution

“Plastic pollution, accumulation in the environment of synthetic plastic products to the point that they create problems for wildlife and their habitats, as well as for human populations. In 1907 the invention of Bakelite brought about a revolution in materials by introducing truly synthetic plastic resins into world commerce. By the end of the 20th century, plastics had been found to be persistent polluters of many environmental niches, from Mount Everest to the bottom of the sea. Whether being mistaken for food by animals, flooding low-lying areas by clogging drainage systems, or simply causing significant aesthetic blight, plastics have attracted increasing attention as a large-scale pollutant.” (Plastic Pollution)

Marine Protected Areas (MPAs)

A marine protected area is a defined region designated and managed for the long-term conservation of

marine resources, ecosystem services, or cultural heritage zones. These areas often ban fishing or other practices that can damage the ocean, and sometimes ban boat traffic from passing through them. They also often ban deep sea mining, giving another protected area for oceanic life affected by mining. But cannot prevent slurry from entering the area.

Background Information

Oceans experience various forms of exploitation through different processes. Most forms of ocean exploitation eventually have an effect on Climate change and accelerating its processes. Overfishing leads to a lack of oceanic life, which leads to imbalances in the food chain. Finally, decreasing the amount of CO2 that the ocean is able to absorb. Which can be detrimental to the Climate, as previously stated. Over the last 100 years, the amount of exploitation the ocean has experienced has significantly increased. With the increase in the human population, more fish are fished which leads to the dramatic increase in overfishing which has a substantial effect on both the total fish populations and the oceans as a whole. Plastic pollution similarly also has a large effect on the Marine life of the ocean. Its effect cannot be understated, as plastic has a large impact because of its ability to rise through the food chain. As well as further damaging marine species and fish, of which stocks are already low due to overfishing.

The effects of plastic both damage the natural beauty of an ecosystem which can be used for economic gain but can also hurt humanity directly through microplastics. The oceans are also threatened by the noise pollution that boats and submarines produce when travelling. Oceanic travel produces noise through sonar, propellers or rudders. This noise can be especially harmful to animals that use whale songs to communicate with each other. Sonar in particular exploits animals that communicate through whale song as it sounds extremely similar to whale song, inhibiting communication between pods. Exploiting many animals that are already endangered and further lowering their numbers by splitting pods apart and lowering the biodiversity of the ecosystem. Finally, offshore mining has another large impact on oceanic ecosystems. Once again, it has the potential to kill oceanic animals through rockfall or adding more dust to surrounding water. Furthermore, oceanic mining destroys natural ecosystems and adds human intervention to a marine environment that when deep underwater is often not well understood. Which could have any number of effects that are not yet fully understood. While also posing a risk to civilian workers.

Overfishing

In 1990 fish stocks were already unsustainably farmed, with only around 90% of fish stocks remaining each year. But currently with the increase in overfishing only 65% of fish stocks are conserved worldwide. By current projects, the fish in the ocean will run out by 2048. Additionally roughly 1 in 5 fish caught are illegally caught. A statistic that SDG 14 is specifically working to help combat. Only 24 years away, a recent number will lead to the complete collapse of ocean ecosystems and possibly a full environmental collapse as CO2 stops being absorbed into the ocean because of a lack of sea life. The full list of possible effects that may affect the oceans are as follows: A loss of biodiversity, creating endangered or extinct species, excessive Algal growth, and more dangerous effects of climate change/global warming. Along with global warming, as already mentioned, a loss of biodiversity is bad for the rest of the oceanic environments and will make them more susceptible to disease and make humans more susceptible to diseases carried by fish. Increasing the fractional likelihood of another pandemic like COVID-19. Furthermore, creating endangered species also brings with it problems. Creating endangered species for one makes the catching of future fish almost impossible. But also helping to decrease global biodiversity, ramping up the damage created by the previously mentioned effects. Finally, aggressive algal growth is probably not the first side effect that many individuals are likely to think of, but it is a particularly potent issue in the ocean. Algae growth effectively suffocates fish in the sea by consuming the majority of the oxygen in the water. Effectively, excessive algae is able to drown fish in the water as well as make the water completely unfit for human consumption. This is a major issue for rivers that are used as both fisheries and water stores. Creating drinking water problems for inhabitants of surrounding settlements.

While most issues relate to depriving humanity of a valuable food source and resource, there are many more effects of overfishing. Bycatch are the extra animals unintentionally captured in the nets of fishing boats that are strangled by nets. Apart from being an unpleasant death. Bycatch has the potential to threaten other important forms of life in the ocean, and not just the fish that are the desired products. It can kill animals, which many fish populations live in harmony with by ocean processes. Such as smaller fish feeding on the dead skin of larger ocean species such as whales and sharks. Which is a vital food source for some smaller fish. To preserve the ocean as a whole as SDG 14 aims to do; The species closer to the base of the oceanic food chain must be protected and preserved.

Finally, the major issues of overfishing come from some fishing methods used, such as trawl or bomb fishing. Bomb fishing as described creates a destroyed ocean floor, making it harder for the seafloor to

regrow and further damaging the carbon sinks of the ocean. However, this method also produces an incredibly large amount of Bycatch, as any living organism near the explosive is instantly killed. This practice is undoubtedly the most environmentally destructive fishing practice. It has detrimental effects on the ocean floor and produces large swaths of bycatch, but even further will destroy any coral reefs in the area. The explosions damage both the plants and the animals in the region. As can be seen with the bomb fishing fields of Sri Lanka, showing the damage to this practice; Trawl fishing also has many similar environmentally damaging consequences.

Ocean-Based Plastic Pollution

In the middle of the Pacific Ocean, there are two garbage patches that turn the ocean into a wasteland, choking the marine life around it. The effects of ocean-based plastic pollution are incredibly widespread, for the ocean as a whole and the marine life within it. 350 Million tonnes of plastic waste are produced each year: roughly 0.5% of it ends up in the oceans. That equates to roughly 1.75 million tons of plastic ending up in bodies of water every year.

Plastics have many different adverse effects, based on the types of plastic. Firstly, large plastics such as plastic bags and ringed plastic. These types of plastics can poison larger animals that swallow them. This again affects biodiversity by killing the animals, and further exploiting the ocean. Furthermore, by swallowing large sharp plastic, an animal's insides can be lacerated and cut. Which, aside from being a painful death, will have the potential to go up the food chain for other even bigger animals that eat the initial animal who ate plastic. Such escalations have the potential to kill multiple animals up different food chains with just one piece of plastic.

Microplastics have an even larger impact, not just on the environment and creatures of the ocean, but also humans who can ingest microplastics without knowing. This exploitation of the ocean happens when plastics are broken down by the waves and processes of the sea. After this, it can be ingested by fish or other marine life. Microplastics can be ingested but not excreted or broken down in the stomach. Over time the microplastics build up in the stomach until they are either killed by being fished, killed by a predator, or killed by the microplastics in the stomach, a death commonly considered to be inhumane. The same is true for humans, who end up eating these fish that have microplastics in their stomachs. This has serious health effects and can only be removed by an operation. Not only do plastics in the ocean severely affect the ocean but also have the potential to hurt humans as well. The exploitation of oceans by dumping plastics is a major issue that comes from the large amount of plastics created globally and may be solved by stopping plastics from entering the ocean in the first place or attempts to take plastic out. Though, latter solutions have been criticised for only removing very little plastic for much investment. Such as projects like “Team Seas”. Solutions such as this have a large effect on removing plastic from the ocean, however can fail to address the root of the problems that causes plastic to enter the oceans. Creating some change in the amount of plastic in the ocean but still only delaying the problem rather than solving it completely. SDG 14 specifically lists the increase of plastic in the ocean as a major threat to it’s long term survival. Therefore, by stopping plastic being added to the ocean, as well as finding a solution to remove current plastic from the ocean, is vital. As otherwise, plastics will turn into microplastics. A solution is needed to limit the flow of dangerous plastics into the sea.

Ocean-Based Noise Pollution

Ocean-based plastic, while not the first issue perceived in association with oceans, is probably still one of

the most severe. Any solutions have the potential tooth affect international trade and defence. The most severe effects of noise pollution on the environment are disrupting communication between marine life that communicates through whale songs or similar methods. This disruption is caused by the variety of noise created by humans in the oceans through practices such as but not limited to: commercial shipping, oil exploration, seismic surveys, offshore wind turbine installation, and military sonar. By disrupting communication different species can get lost and separated from their pods making them more vulnerable to starvation or other dangers. Additionally, it can make animals that rely on echolocation lost and disoriented by making them lose their way in the ocean and leaving them unable to get to breeding grounds, and at a smaller scale makes hunting difficult. Which will limit the amount of food these animals are able to consume. Multiple studies and articles list additional effects including: “As well as disturbing essential life activities, noise can also indirectly cause injury. Military sonar and seismic air guns are high-intensity and excessively loud and can send animals into a panic. To get away from the noise, they might ascend too quickly, leading to decompression sickness and skin damage from gas bubble lesions. In some cases, loud sounds can cause hearing loss or even cause animals to strand and die.”

Primarily, dolphins and whales are affected by ocean noise pollution, though they are not the only animals affected. It can affect fish, squid and encrustations as well, though to a lower degree. The effects of this are once again a lack of biodiversity in the ocean because noise pollution slowly is killing the population of the ocean by making it more difficult to breed and hunt. The effects of biodiversity loss have already been explained, and they are extreme. There are no international guidelines helping to enforce a reduction of noise solutions, however, individual ports have taken measures to decrease the noise: the port of Vancouver being a clear example. It offers clear discounts to boats, they comply with the noise-reducing measures protecting the sea life of Vancouver. However, further solutions not on international shipping and on international security sonar will likely find significant setbacks with member states wanting to preserve their right to monitor their oceans for enemy vessels.

Deep-Sea mining

Resource Breakdown

	Terrestrial Tonnage (tons)	Global Cobalt-Rich Crusts (dry tons)	Global Polymetallic Nodules (dry tons)	Global Subsea Compared to Terrestrial
Manganese	5,200,000,000	185,000,000,000	42,200,000,000	4,369%
Titanium	1,200,000,000	9,170,000,000	1,980,000,000	929%
Cobalt	25,000,000	4,510,000,000	645,000,000	20,620%
Nickel	300,000,000	3,230,000,000	1,250,000,000	1,493%
Rare Earth Elements + Ytrrium (REY)	486,940,000	1,990,000,000	353,000,000	481%
Copper	5,600,000,000	802,000,000	853,000,000	30%
Zirconium	77,000,000	556,000,000	112,000,000	868%
Molybdenum	25,400,000	428,000,000	85,300,000	2,021%
Tungsten	7,000,000	78,900,000	12,800,000	1,310%
Lithium	86,000,000	9,580,000	16,700,000	31%

Deep-sea mining has the possibility to become an extremely lucrative industry. Possible values could reach 20 trillion dollars worth of value from the Sea bed. However, deep sea mining also poses significant risks to both the ocean and the civilians working on deep sea mining. The most prominent effect of deep sea mining are the plumes of particles spread throughout the water as the resources are mined. These particles often also described as slurry are often a variety of sizes mainly ranging from dust small enough to be dissolved and also often 3-10cm sections of rock. These sections of slurry can cover tens of thousands of kilometres apart from the immediate vicinity of the mining area. Often carried by currents around the oceans quickly. This slurry can be bad for marine life in a variety of ways. The slurry can pollute their homes, making it difficult to find a permanent home in an animal sense. Reducing their chances of survival. Furthermore, as deep sea mining operations take months and sometimes even

years they can be extremely loud and invasive structures which makes oceanic life flee the area and their natural environment which makes the survival of the animals decrease further once again. Additionally, the slurry can also block and destroy natural plants that sea life eats, again damaging their population and the biodiversity of the sea, which has major consequences for climate change.

Over 1.5 million square kilometres have been designated for deep sea mining, and it has other important effects as well that should be mentioned. Pollution is one other major concern that deep sea mining creates. Deep sea oil spills can pollute the ocean and destroy both natural habitats and natural beauties of surrounding beaches and nations. Possibly destroying the income that such an area would have gained from tourism. Multiple national corporations' accidents have the possibility to destroy the income of tourist-based nations. Deep sea mining also uses an extremely large amount of energy and resources because of its location and the pressure that vehicles and mining equipment experience at the depths where deep sea mining often takes place. Any destruction of equipment that is not built up to standards has the potential to pollute the ocean around it when destroyed and release any slurry it has stored. Both of these will have major environmental repercussions, making deep sea mining an extreme exploitation of the sea around the world that requires a prominent solution that protects the economic interests of all involved.

Major Countries and organisations Involved

People's Republic of China

The People's Republic of China is the largest exporter of sea-based products in the entire world. It exports 68 million metric tons of seafood every year, and thus also supplies much of the world's seafood. It also claims much of the South China Sea, which hosts a variety of ocean resources that many nations including the PRC value the resources of greatly. They often vote against measures that would restrict fishing practices and the movement of economic goods.

Kingdom of Norway

The kingdom of Norway is one of the biggest exporters of fish and marine products in the entire world. This means that Norway’s economy relies extremely heavily on fishing, and thus any bans may unfairly harm the country's economy. They also provide much of the world's sea-based products, so any delegations that import from Norway may have to deal with price fluctuations based on the proposed solutions.

Republic of India

The republic of India is one of the biggest offshore miners in the world. It also lies next to the Indian Ocean, which many states border and have tourist industries along. As such any accidents will not only affect India but also neighbouring countries, and due to the amount of Oil extracted India has a large responsibility to the safety of its workers in rigs and to it's neighbouring countries.

International Maritime organisation

The International Maritime organisation is a key player in the topic of fishing, as they guarantee the safety standard of fishing boats and their crews. The IMO has also made multiple suggestions about combating marine litter [Slurry]. Meaning that they hold a good understand of all exploitations of the sea. Any solutions wanting to change the active role of fishing vessels and their crew will likely have to go through the IMO in order to implement solutions making them a key player.

Food and Agriculture organisation

The Food and Agricultural organisation plays a large role here, as the FOA is the UN-based organisation that deals with the food of the world. The ocean's primary use in many modern nations is travel and seafood. In the prospect of seafood or seafood, the FAO may be needed to help regulate where other food that will be lost from the sea can be sourced from. The FAO will be able to provide practical solutions and data to help solve the issues arising from the loss of seafood for states that may not have other options.

Timeline of Events

Date	Description of event
1982	Exclusive Economic Zone: the EEZ was added to the United Nations Convention of the Seas.
1992	Earth Summit: this conference addressed many global development issues, including establishing the first guidelines on sustainable fishing practices.
1995	International Conferences on Responsible Fishing: this conference focused on being a catalyst for the creation of international agreements to prevent overfishing and conserve marine life.

1994	Formation of the International Seabed Authority: the International Seabed Authority (ISA) was created by the United Nations Convention on the Law of the Sea to regulate mining activities in the international seabed area, an attempt to ensure environmental protection for deep sea mining.
2002	World Summit on Sustainable Development: this summit helped recognise the urgent need for sustainable ocean management and led to the launch of initiatives to curb overfishing, improve marine protected areas, and try to reduce ocean noise pollution.
2015	Adoption of the Sustainable Development Goals: the current sustainable development goals under SDG 14 help to try and promote the issues outlined in this research report.
2017	UN Ocean Conference this conference helped highlight the importance of global cooperation in promoting SDG 14.
2020	UN Decade of Ocean Sciences Sustainable Development launch: this agreement aims to protect marine biodiversity in areas beyond national jurisdiction. Attempting to protect all areas of the ocean rather than nationally owned areas.
2023	UN High Seas Treaty Signed: the UN's legally binding treaty aims to protect biodiversity and protect the high seas from fishing, deep-sea mining, noise and others.
2025	THIMUN SDC I

Previous Attempts to solve the Issue

Oceans and the law of the sea: oceans and the law of the sea

This 376-clause document is the most comprehensive resolution the UN has drafted to deal with the disputes of the oceans, prevent them from exploitation and ensure their longevity in the future in the face of climate change. The 2 most solutions on how the ocean will be sustainably developed are;

Encouraging Ecosystem-Based Approaches: Integrating ecosystem management to ensure sustainable use and resilience of marine biodiversity, especially in areas beyond national jurisdiction. Capacity Building and Technology Transference: Supports developing nations with training, funding, and access to advanced marine technologies for conservation and sustainable oceanic resource management.

Possible Solutions

Global Ban's

The most simple and direct solution to 2 of the forms of exploitation is simply a global ban on blast and trawl fishing, making it illegal for fishermen to trawl fish in international waters. This solution will immediately make it far more difficult to fish through these practices and allow legal repercussions to be taken against individuals who use them. It will also immediately protect areas around deep sea mining sites, but may affect their economic profit. However, in international waters, it may be hard to enforce and this may disrupt the livelihood of many fishermen around the world, making this option effective but extreme and likely to harm some LEDCs and MEDCs.

Sustainable Fishing Subsidies

To encourage fishing companies to use sustainability practices, financial subsidies can be given to fishing boats that use more sustainable practices to allow them to sell their fish at lower prices to shops. Outcompeting environmentally damaging fishing practices and causing them to slowly go out of business and force them to adopt environmentally friendly measures.

No-boat zones

Similar to a no-fly zone, a no-boat zone will give some solution to all 3 problems. This solution could come in 2 different forms, however. Firstly, that of permanent areas which will ensure the area is not damaged by trawl nets or bomb fishing. These protected areas however may become prime illegal fishing areas due to their abundance of marine life, making these areas require naval protection. Secondly, having moving protection zones that move with the migration of whales and dolphins allows whales and dolphins to stay in their natural habitat and breed while staying safe. However, this approach might be difficult to implement and understand for fishermen with little internet connection. To update a map of where they may fish every day.

Noise Reducing Propellers

Noise reduction propellers can be equipped on boats to reduce the amount of extra noise that boats

emit. While this will not interfere with sonar, it will also decrease the amount of extra noise that whale song has to travel through and will likely decrease the number of lost pups and members of pods, which will help protect these animals from dwindling numbers from getting lost.

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Appendix or Appendices

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