United Nations Environment Programme

Damage to marine environment due to the plastic pollution as a result of fishing

Research Report

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Forum: *United Nations Environmental Programme*

Issue: *Damage to the marine environment due to the plastic pollution as a result of fishing*

Position: *Deputy Chair*

Introduction

Ever since commercial fishing had been applied, the quality of the marine environment has been declining causing deterioration of coastal waters. There are several ways that this activity has been threatening the lives of , however, plastic pollution as a result of fishing has been listed as one of the most menacing problems. Even though it is known to be the biggest contributing factor when it comes to marine damage and the risk of extinction of numerous species, this problem has not been directly addressed. Since the UNEP does not currently have an ongoing convention strictly addressing this problem – even though it is part of the Sustainable Development Goals, included in Goal 14 (Life below Water) – it is high time that a plan of action is created to stop and reverse the damage that has been made.

Definition of Key Terms

Marine ecosystem:
The complex of living organisms in the ocean environment.

Commercial fishing:
The taking of fish and other seafood and resources from oceans, rivers, and lakes for the purpose of marketing them.

Marine debris:
Litter that ends up in the ocean, seas, and other large bodies of water.

Endangered animal:
Any species that is at risk of extinction because of a sudden rapid decrease in its population or a loss of its critical habitat.

Sustainable development:
An approach to economic planning that attempts to foster economic growth while preserving the quality of the environment for future generations.
Sustainable Development Goal 14:

Conserve sustainable use of the oceans, seas and marine resources for sustainable development.

Great Pacific Garbage Patch:
A collection of marine debris in the North Pacific Ocean.

Microplastic:
A small piece of plastic, less than 5 mm (0.2 inch) in length, that occurs in the environment as a consequence of plastic pollution.

ALDF:
Abandoned, Lost, or Discarded Fishing Gear

Ghost gear:
Refers to lost, abandoned, or discarded fishing implements—nets, traps, pots, lines—that are left in the ocean for one reason or another.

Aquaculture:
Also called fish farming, fish culture, or mariculture, the propagation and husbandry of aquatic plants, animals, and other organisms for commercial, recreational, and scientific purposes.

Biodegradable:
Capable of being decomposed by bacteria or other living organisms and thereby avoiding pollution

General Overview

Significance of the problem

Commercial fishing contributes to marine damage in many ways. The first signs of large-scale fishing had been recorded around the 800s by vikings, who were catching cod to sell it in Italy, Spain and Portugal. Ever since then, this branch of the economy has been thriving. After the first industrial revolution, when the steam engine was invented, the demand for industry exponentially increased. Some other significant steps and inventions in fishing include:

- the invention of plastic;
- the appearance of steam-driven winches (allowing bigger and heavier nets to be used);
- the replacement of steam engines with internal combustion engines; and
- the invention of large stern trawlers.

We all know that plastic pollution is the most threatening issue to marine environment and ecosystems, but little is it emphasised that according to Greenpeace, over 70% of the plastic floating on the surface of oceans and microplastic in the water can be connected to fishing. Another study found that over 86% of the Great Pacific Garbage Patch (estimated 42 000 tons) is related to fishing nets. It is the marine wildlife that is severely affected by this pollution and international action is needed to suppress this issue.

These nets that end up in the ocean can cause marine creatures to get entangled in it, which alone causes around 100 000 deaths of these animals annually. However, plastic not only does direct damage to the environment. In studies carried out in 2013, scientists found that the plastic particles attract chemicals, which then causes liver toxicity as it enters the bloodstream when it is indigested by the fishes. A study carried out by Conserve Turtles showed that over 1 million marine deaths can be linked to plastic pollution each year.

This problem is so striking that over 700 marine species are endangered. The animals that are on the edge of extinction include:

- Coral Reefs,
- Bluefin Tuna (Thunnus thynnus),
- Green Sea Turtle (Chelonia Mydas), and
- Fin whale (Balaenoptera Physalus).

Goal #14: Life below Water

The UN's Sustainable development Goals were established in 20xx and its main aim is to reverse and reduce the effect of climate change in a way that progress is simultaneously made. Goal 14 is oriented towards the improvement of the condition of the oceans. This not only includes the protection of maine ecosystems but also highly focuses on supporting small scale fisheries by winding up – illegal – overfishing. What is more, one of the main targets of the organisation is to "prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution"[1]. Even though the means of attainment does not only concern plastic pollution due to fishing, the objective of this goal is fundamentally the same, to protect the marine environment and those lives depending on it. These targets play a significant role in combating this issue; however, several factors have raised difficulties in the past years , for instance the COVID-19 pandemic or the situation in Ukraine, in their success. This is why a more specific plan of action is crucial in order to restrain the already existing threat of the marine environment.

Major Parties Involved

China:
Currently China is the country that is accounted to produce the largest amount of marine animals by commercial fishing. This means that roughly 86 billions of fish are harvested in this single country. Even though China does not ignore its contribution to plastic pollution and is therefore making continuous effort in reducing its urban waste, steps towards a more sustainable fishing method have not been taken. This is not only important for economical reasons, but also because of the fact that fish is making up a significant portion of the Chinese diet, therefore the health concerns must be taken into consideration in the terms of combating this issue.

[1] Oceans - United Nations Sustainable Development

USA:
In one of his speeches, the U.S. Secretary of State Antony Blinken declared that plastic pollution is an international problem affecting everyone around the world therefore he supported launching negotiations on a global agreement to combat ocean plastic pollution, emphasising that the ALDFG particularly endangers marine ecosystems. The USA is also willing to help those developing countries financially who are in the need of addressing the problem directly. A research, carried out in 2021, revealed that only one quarter of the observed U.S. marine species live in fully protected areas and only few regions fit in the accepted network criteria of successful biodiversity protection; however, there are significant gaps in the information collected.

Japan:
In 2019 the "Osaka Blue Ocean Vision" was shared by the leaders of G20, which agrees on the attempt to eliminate any addition of pollution of marine plastic litter by 2050. However, Japan called upon non-G20 nations to share this vision out of which 87 countries have already joined.

Republic of Korea:
Korea – among other countries – strongly believes that this problem cannot be addressed alone and it demands international cooperation. However, a national plan of action was introduced to cope with this issue, such as reducing land based plastic pollution, recycling marine plastic, and restoring coastal blue carbon ecosystems.

Singapore:
According to Singapore's NEA in 2018 the country produced over 900 000 tons of plastic waste. This alarming sign is one of the reasons why the nation suggested the establishment of an international platform where information can be shared about the state of improvement and new innovative solutions.

Timeline of Events

800	Earliest ways of commercial fishing
1819	First steam ship
1862	First man-made plastic
1954	International Convention for the Prevention of Pollution of the Sea by

	Oil
1973	International Convention for the Prevention of Pollution from Ships
2015	Sustainable Development Goals
2022	UN Ocean Conference

Possible Solutions

The most obvious step would be reducing the number of illegal and unsustainable fishing and overexploitation of the ocean to zero; nevertheless this would be an impossible desire and despite the efforts no significant change could be expected.

Upcycling plastic:

As we know millions of tons of plastic due to the fishing industry (such as ropes, fishing nets, etc.) is already in the ocean causing entanglements, and imposing the sea creatures to health risks. It is important to not only think about reducing the new waste, but to also make an effort in cleaning out the ocean and recycling the plastic.

Plastic dams:

Plastic dams are physical barriers that stop plastic from entering the ocean, therefore, this method can be applied in regions where coastal fishing causes a problem.

Replacing plastic in aquacultures:

Plastic can cause a problem at underwater mussel farms, where a mesh is used to protect the marine creatures from predators. Attempts on making a more environmentally conscious replacement of the plastic equipment used in underwater cultures have been made. One of the most outstanding ideas to solve this issue is associated with Spanish scientists who are actively trying to find a biodegradable alternative for the used mesh.

Sources

https://www.britannica.com/technology/commercial-fishing

https://www.britannica.com/science/marine-ecosystem

https://earth.org/data_visualization/plastic-and-fish/#:~:text=The%20role%20of%20plastics%20in%20marine%20contamination%20A,the%20bloodstream%20and%20cause%20liver%20toxicity%20and%20pathology.

https://www.theguardian.com/environment/2019/nov/06/dumped-fishing-gear-is-biggest-plastic-polluter-in-ocean-finds-report

https://education.nationalgeographic.org/resource/great-pacific-garbage-patch

https://www.greenmatters.com/p/how-many-animals-are-killed-by-plastic-pollution

https://www.britannica.com/science/endangered-species

https://midgeo.com/most-endangered-marine-animals-due-to-plastic-pollution/#:~:text=Soft%20plastic%20trash%20can%20block%20marine%20species%E2%80%99%20gastrointestinal,debris%20and%20people%20were%20caused%20by%20plastic%20debris.

http://www.historyoffishing.com/fishing-history/history-of-commercial-fishing/

https://www.weforum.org/agenda/2020/05/inventions-sea-plastics-ocean-pollution/

https://www.indexmundi.com/facts/indicators/ER.FSH.PROD.MT/rankings

https://earth.org/china-plastic-pollution/#:~:text=Fish%20makes%20up%20the%20majority%20of%20diets%20for,Chinese%20waters%20that%20were%20examined%20have%20ingested%20plastic.

https://www.un.org/sustainabledevelopment/oceans/

https://www.youtube.com/watch?v=j2kB6831gVs&t=16s

https://www.britannica.com/technology/microplastic

https://sdgs.un.org/sites/default/files/2022-02/US_20220221_U.S._Input_for_2022_UNOC_Concept_Paper.pdf

https://www.britannica.com/story/talking-ocean-trash-ghost-gear-keeps-on-fishing

https://www.euronews.com/green/2021/04/27/alternatives-to-plastic-help-lower-pollution-in-the-oceans

Pictures (in order of appearance):

https://th.bing.com/th/id/OIP.DSXdc6EIgVVHbCCMGiOmqAHaEZ?w=302&h=180&c=7&r=0&o=5&dpr=1.5&pid=1.7

https://static.businessinsider.com/image/55db4b6add089548448b45b8/image.jpg

https://www.un.org/sustainabledevelopment/wp-content/uploads/2022/07/Goal-14-infographic.pdf