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Research report

Forum: UNEP

Issue: Finding ways to reduce and prevent the further forming of the plastic soup

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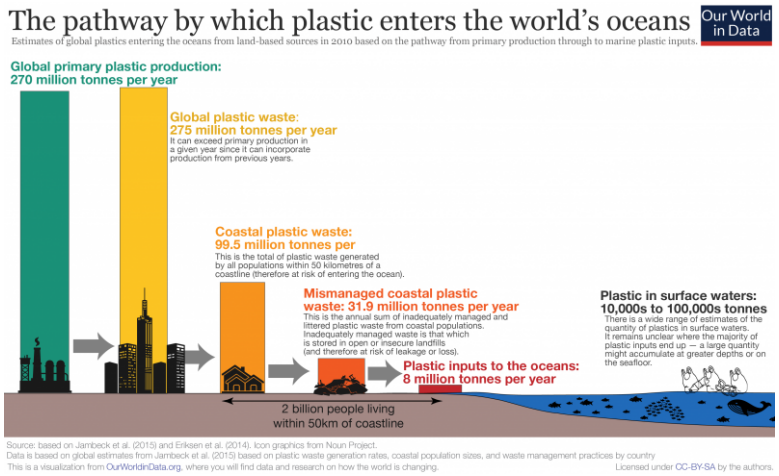
Introduction

Each year eight million metric tons of plastic ends up in the ocean, which is the equivalent of dumping the London eye in the ocean over 4 million times. This has severe effects on ecosystems, wildlife and marine citizens. While this amount of ocean pollution has been growing rapidly, there hasn't been an UN assembly with the plastic soup as their starting point, possibly because of the complexity of the issue of plastic pollution in oceans. Does the UN need to hold delegations accountable for their yearly plastic pollution? And if so, how will this affect the modern, plastic based, economy? In this research report, I will be putting down a study guide for the issue of reducing and preventing the further forming of the plastic soup.



Definitions of key terms

Microplastics

Extremely small pieces of plastic debris in the environment resulting from the disposal and breakdown of consumer products and industrial waste.

UNCLOS

The United Nations Convention on Law of the Sea. It informs states of their duty to protect the marine environment. The United States of America has not accepted these laws do to opposition from Republicans in the senate.

Single-Use Plastics

These are disposable plastics that are used only once before they are thrown away.

Pacific gyre

A large system of circulating ocean currents. These have influence on the movement of waste in the oceans.

Great Pacific garbage patch

A garbage patch of marine debris located in the central North Pacific ocean. This patch is estimated to be the size of Mexico.

Biodegradable Plastic

This is plastic that naturally decomposes in the environment.

POPs

Organic compounds that are resistant to environmental degradation through chemical, biological, and photolytic processes.

Ocean Conservancy

A non-profit environmental advocacy group. The organisation helps formulate ocean policy at the federal and state government levels.

MARPOL

The international Convention for the Prevention of Pollution from Ships. It's objective is to minimize pollution of the oceans and seas, including dumping, oil and air pollution.

The Basel Convention

An international treaty aimed at reducing hazardous waste transportation between countries, with a particular focus on preventing hazardous waste transfer from developed to less developed countries (LDCs).

NOAA

The National Oceanic and Atmospheric Association. The NOAA is an American scientific and regulatory agency that forecasts weather, monitors oceanic and atmospheric conditions, charts

the seas, conducts deep sea exploration, and manages fishing and protection of marine mammals and endangered species in the U.S exclusive economic zone.

UN SDG's

Sustainable Development Goals. The UN set out 17 sustainability goals to be met in 2030. Relevant SDG's are SDG 14 (life below water) , SDG 3(good health and well-being) and SDG 12(responsible consumption and production).

General overview

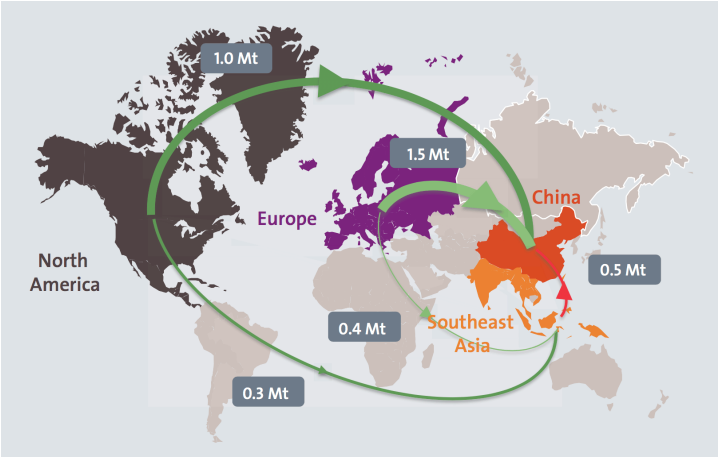
Climate change, the extinction of species, deforestation, overfishing, and the uncontrolled growth of the global population. Back in 1992, scientists warned the world about these developments that threatened the future in the paper “World scientists warning to humanity”. The plastic soup was a quite unknown subject at the time and did not feature on the list. In the meantime, plastic soup and its consequences have become one of the biggest global environmental disasters and hundreds — if not thousands — of scientists research on plastic pollution and its harmful effects. We continuously learn more about the problem, but there are still gaps in our knowledge.

Field and laboratory studies are costly, and years of research are required before forming a firm opinion. Nano-plastics, for example, require urgent research into their toxicity and effects. These particles have the ability to pass through tissue and human cells and infiltrate food supply. However, there are no instruments that can accurately measure these particles. As a result, the scope of human exposure cannot be determined at this time. Another issue is the lack of standard operating procedures. Scientists use their own methodologies, which makes it difficult to compare the findings of different studies on plastic pollution. To enhance our global knowledge on this subject we need to increase information sharing between member states and intensify research programmes. This international information sharing and collaborating already happens within UN organisations such as the Intergovernmental Oceanographic Commission of UNESCO (IOC).

As mentioned, the issue of plastic pollution has severe effects on the world. Microplastics or nano-plastics can upset the food chain and infiltrate wildlife. Ground water gets polluted which results in marine life getting poisoned. This litter then transfers to those who eat the fish, even humans. This results into the average human eating approximately over 70.000 microplastics a year. Last but not least, world’s ecosystems get damaged with millions of animals dying every year to the point where certain species are going extinct, all because of plastic pollution. For example 1.1 million seabirds die annually because of plastic pollution.

Plastic pollution is currently addressed through a patchwork of treaties, agreements, and action plans. The United Nations Convention on the Law of the Sea (UNCLOS) outlines states' obligations to safeguard the maritime environment. 167 countries and the EU are parties in this agreement. Big non-parties are Turkey, Kazakhstan and the United states of America.

The Stockholm Convention limits the use of specific chemicals. One of the most important additions of this conference is the Stockholm Convention against Persistent Organic Pollutants, or so called POP's. There 184 parties that signed this treaty. The International Convention for the Prevention of Pollution from Ships (MARPOL) prohibits ships from dumping plastic into the sea. MARPOL has 156 states as parties to the convention, being flag states of 99.42% of the world's shipping tonnage.



Probably one of the most important treaties is the Basel convention, particularly the Basel convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. As of January 1, 2021, the Basel Convention controls international shipments of most plastic scrap and waste destined for disposal or recycling. This means that transboundary movements of plastic waste are of prior notice to the Basel convention and consent requirements. Strangely enough the United States of America is a not a party but a signatory, which means, together with Haiti, these are the only two nations that didn't agree upon the Basel convention. However, they do show formal support and under the Biden administration there may be hope upon the USA becoming a party.

Major parties involved

The People's Republic of China

China produced the largest quantity of plastic at 59.08 tons of plastic. Despite being the largest producer of plastic waste, daily plastic waste per person is one of the lowest in the world at .12 kilograms. China plans to ban single-use, non-degradable bag in all cities and towns by 2022.

The United States of America

The United States is the second-largest producer of plastic waste in the world. The U.S. produced about 37.83 million tons of plastic waste in 2010 and produces more than 275,000 tons of plastic litter. The United States burns about six times more plastic waste than it recycles.

Germany.

With 14.48 million tons of plastic Germany is the third-largest plastic waste producer. Germany's daily plastic waste per person is one of the highest in the world at .46 kilograms. However, the German government has been performing action plans to reduce the amount of plastic waste produced.

Greenpeace

It's an international network of independent organizations that act on the principles of non-violence to protect the environment, biodiversity and promote peace. It is one of the prominent NGO's fighting against plastic pollution.

Plastic polluting cooperation's

Companies like Coca-Cola, Pepsico or Nestle are the most polluting in the entire world. However there are no restrictions or agreements laid upon the plastic production of these organisations.

IOC-UNESCO

The Intergovernmental Oceanographic Commission of UNESCO is the United Nations body responsible for supporting global ocean science and services. The IOC enables its 150 Member States to work together to protect the health of our shared ocean by coordinating programmes and funding global research

Timeline of Key Events

1869	Celluloid gets invented. It's the first real plastic.
1925	The term "plastic" is introduced. The term is derived from the Greek word "*plastikos*" which means "capable of being shaped or molded."
1961, 27 okt	The IOC-UNESCO gets established and meets in Paris.
1972, 5 june	The UNEP was invented in Nairobi, Kenya
1977-1979	American grocery stores introduce plastic bags at their checkout counters, eventually replacing brown paper bags.
1989, 22 mar	The Basel convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was adopted.
1997	Charles Moore first discovered the great pacific garbage patch.
2002	Bangladesh becomes the first country to ban plastic bags.
2008	Chinese officials announce a nationwide ban plastic bags, to take effect in Jan. 2009. The country was using an estimated 3 billion bags per day.
2011	For the first time, the global consumption of plastic bags has reached 1 million every minute.
2015, sept	The UN brings out its 17 SDG's for 2030.

Previous attempts to solve the issue

Legal efforts have been made at the international and national levels to address plastic pollution. The most important are the 1972 Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter or the London Convention, the 1996 Protocol to the London Convention (the London Protocol), and the 1978 Protocol to the International Convention for the Prevention of Pollution from Ships (MARPOL). However, compliance with these laws is still poor, partly due to limited financial support to enforce them.

The Global Ghost Gear Initiative, launched in September 2015, is the first effort dedicated to tackling the problem of ghost fishing gear at a global scale. Ghost gear, which refers to abandoned fishing equipment like nets, line, rope and traps, makes up around 10 percent of global marine litter. An estimated 640,000 tons is added to our oceans annually. The initiative supports nearly 20 projects around the world that capture and make use of ghost gear. These are some of the nations and NGO's included in this project: Scandinavia, UK, NOAA and the Philippines.

Possible solutions

Recycling and reuse of plastic materials are the most effective actions available to reduce the environmental impacts of open landfills and open-air burning that are often practiced to manage domestic waste. Sufficient litter and recycling bins can be placed in cities, and on beaches in coastal areas to accelerate the prevention and reduction of plastic pollution in oceans.

To reduce microplastic waste from pellets, synthetic textiles, and tyres, governments, research institutions, and industry must collaborate to redesign products and rethink their use and disposal. This will necessitate solutions that examine the entire lifecycle of plastic items, from product design to infrastructure and home use, in addition to trash management.

As mentioned before, to effectively address the issue of marine plastics, research and innovation should be supported. Knowledge of the full extent of plastic pollution and its impacts would provide policy-makers, manufacturers and consumers with scientific evidence needed to spearhead appropriate technological, behavioural and policy solutions. It would also accelerate the conceptualisation of new technology, materials or products to replace plastics.

On a global level we need to coordinate and strengthen existing treaties. Within these new formed bodies form proper action plans, agreements or treaties. An important solution is agreeing upon binding agreements on the reduction of plastic production and usage.

LEDC's should be taken into account for all possible solutions listed above. It is very important to offer financial support for implementing these measures, since a lot of the mismanaged plastic polluters are LEDC's.

Lastly, the issue of plastic pollution in oceans is very complex and it has many different possible solutions. Delegates need to solve problems like transboundary waste dumping, countries not participating or sticking to agreements and LDC's not having the resources to switch from plastic to biodegradable plastic. Remember that throughout the entire issue delegates must stick to their countries, NGO's or UN organisation's morals. All in all this is a very interesting issue to debate. Have fun!

Further reading

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