



Environmental Committee

TOPIC 1: Measures to reduce plastic and microplastic pollution with the aim of preventing coastal water deterioration

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1. Definition of key terms

Pollution: “Pollution is the introduction of contaminants into the natural environment that cause adverse change.”

Plastic: a synthetic material that is not biodegradable and it cannot dissolve in water.

Microplastics: they are small pieces of plastic (less than 5 mm in length) that occur (also) due to plastic pollution.

Coastal water: “Coastal waters means any sea that is on the landward side of the adjacent area of this State but is not within the limits of this State.”

Deterioration: “The process of becoming progressively worse.”

Nonpoint source pollution: pollution that comes from many diffuse sources.

Point source pollution: pollution that comes from a single source.



2. Introduction

Pollution is at the base of almost every environmental problem happening these days and ocean pollution is one of them. Billions of pounds of waste and other contaminants reach the ocean every year. Where is the source of this pollution? Where is this going? Some of the debris ends up on our shores which are washed away by waves and tides. However, most of them sinks, or are eaten by sea creatures who mistake them for food, or are deposited in ocean gyres. Most pollutants that go into the ocean come from land-based activities. The health of our ocean is influenced by natural processes and human activities along the coastlines and far inland. The problem is that too much plastic is produced and us humans are not able to get rid of it. We use it for packages, bottles, bags and personal utensils. One of the largest sources is called nonpoint source pollution, resulting from runoff. Nonpoint source pollution includes many small sources such as septic tanks, cars, trucks, and boats, plus larger sources such as farms, cattle ranches, and timber harvesting areas. Contamination from a single source, such as oil or chemical spill, is referred to as contamination from the point source. These events often have major impacts, but it happens less often, fortunately. Discharge from obsolete factories or water treatment facilities is also known as pollution from point sources.

3. Background information

Plastics are organic synthetic polymers and although they have existed for just over a century, their production has increased exponentially over the years, reaching 300 million tons in 2015. In the world, plastic items are present in a wide range of sizes, from meters to micrometers (MPs).

MPs come from a variety of sources which identify them as "primary" or "secondary." Primary MPs are used as unique personal care products (hand cleaners, face cleaners and toothpaste) or as raw materials used in plastic goods production, such as plastic resin pellets or flakes and plastic dust or fluff. The degradation of larger plastic materials results in secondary microplastics.

MPs have been recorded on a global scale over the past decade, from the poles to the equator. The presence of MPs in ocean waters, freshwater areas, marine sediments, and biota was tested by researchers. Because of their small size, sea creatures such as fish eat MPs more frequently than normal plastic debris. The persistent effects of exposure to MPs on people and populations are little known, but for sure it is not healthy for humans to eat microplastic.

Finally, some studies have shown that chemicals (flame retardants, phthalates, colorants) are frequently mixed with MPs. The ingestion of associated chemicals causes adverse



physiological effects that remain largely unknown to date. In addition, when consumed, MPs will spread through the food web, posing an additional threat to marine biodiversity. Gathering as much data as possible on the presence of MPs in the marine environment is of primary concern in order to gain comprehensive knowledge of the issue and understand the potential impact on human health. The Mediterranean Sea is an almost closed basin with densely populated coastal areas and a high level of maritime trade and leisure. The restricted exchange of water with the Atlantic Ocean allows floating anthropogenic litter to accumulate in the area.

We're surrounded by plastic. It's within the single-use packaging we tend to discard, the patron merchandise that fills our stores, and in our articles of clothing, that shed microplastic fibers when washed.

Only in the first two decades of this century, we have created more plastic than what we have produced up to the year 2000. Each year, billions of pounds of plastic end up in the world's oceans. Studies estimate there are currently 250000 tons of plastic within the world's oceans. Not one area of the surface of the ocean anywhere on earth is free from plastic pollution.

The problem is turning into a crisis. The fuel trade plans to extend plastic production by forty percent over the future decade. Such oil giants are constructing organic compound plants throughout the U.S. to show fracked gas in plastic. This implies a lot of harmful pollution and plastic in our oceans. All 5 of the Earth's major ocean gyres are inundated with plastic pollution. The biggest one has been dubbed the Great Pacific Garbage Patch.

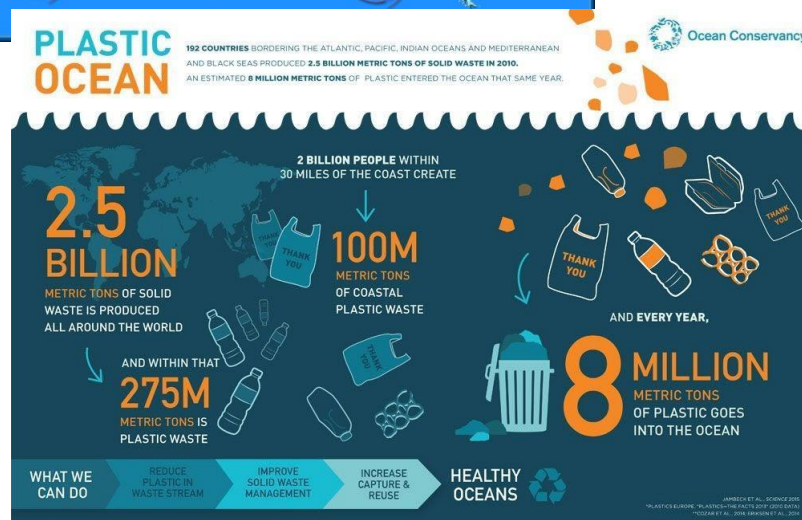
The Great Pacific Garbage Patch is an assortment of marine debris in the North Pacific Ocean. Marine debris is litter that finishes up in oceans, seas, and different giant bodies of water. The Great Pacific Garbage Patch, additionally called the Pacific trash vortex, spans waters from the geographical region of North America to Japan. The patch is truly comprised of the Western Garbage Patch, settled close to Japan, and also the Japanese Garbage Patch, settled between the U.S. states of Hawaii and Golden State.

These areas of spinning debris are connected along by the North Pacific subtropical Convergence Zone, a couple of hundred kilometers north of Hawaii. This convergence zone is where warm water from the Pacific meets up with cooler water from the Arctic. The zone acts as a main road that moves debris from one patch to a different one. The amount of debris within the Great Pacific Garbage Patch accumulates as a result of not being degradable.

Globally, only 9% of plastic gets recycled. Even in developed countries, the rate of plastics collected by households is usually 1 to 500, with little or none of it reborn into packaging. Most "recycled" packaging waste is down cycled into lower price or non-recyclable product, which means that the method is barely delaying the plastics' inevitable journey to the



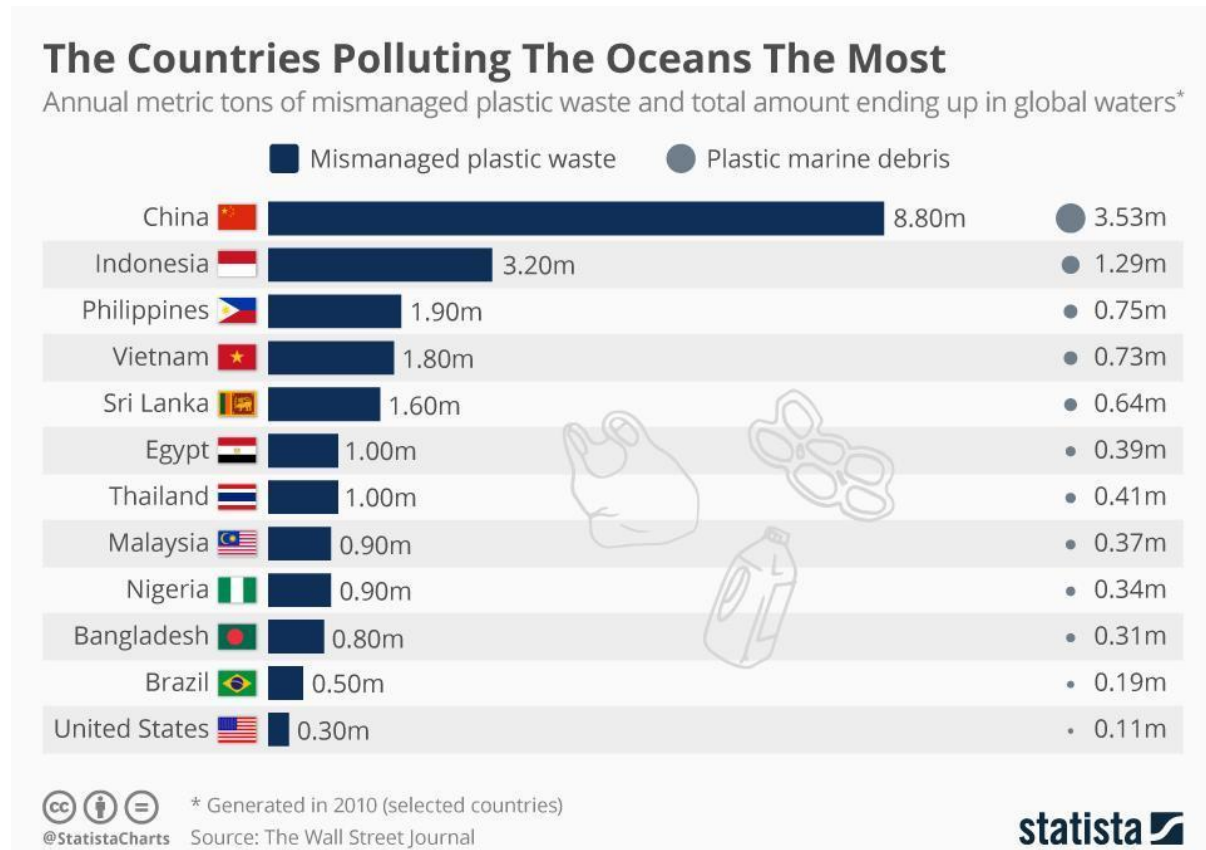
lowland. Unhealthy packaging style, an absence of infrastructure, and therefore the absence of a way to trace plastic waste, all limit the effectiveness of use, and make sure that most pliable packaging can still become waste for the predictable future.



Several inventions to reduce plastic pollution have already been created, such as:

- Edible packaging for water
- The world's first ocean clean up system
- Naked cosmetics
- The Seabin Project
- Edible cutlery
- The toothpaste pill
- Eco six-pack rings

4. Major parties involved



The top 3 countries affected the foremost by plastic pollution are China at eight metric tons of plastic, Indonesia at three metric tons and the Philippines at one metric tons.

China is the most thickly settled country within the world and so produces additional plastic waste. Most of this plastic eventually ends up in the oceans around China; but, microplastics have found their way into China's lakes and rivers. Microplastics have microbes connected to them that alter the chemical structure of those plastics that produce toxins. These toxins make marine life sick. This also affect us if we ingest them or we drink that water.

Like China, plastic waste has affected Indonesia's oceans as well as rivers. Four rivers in Indonesia are among the world's 20 most polluted rivers. Badung city experienced such a dense plastic pollution in April 2017 that it appeared like an iceberg and the army had to be sent to assist with the cleanup. In order to make consumer products, Indonesia relies heavily on plastic because it is inexpensive. Everything is made of plastic from single-use utensils to tables and chairs. The reasons why large plastics and microplastics impact the nation is becoming more evident to the world. Plastics are blocking the rivers and contaminating food and water sources for local people. Plastic releases toxins into the soil and groundwater in



Indonesia's several landfills. These contaminants further threaten the supply of clean water in lakes and rivers.

For plastic pollution, the Philippines is in third place. The main issues linked to plastic pollution are single-use plastic sachets and lack of government intervention. Businesses had to carry their own containers before the advent of sachet packaging and fill it with whatever they wanted. In the 1970s, when plastic became popular, companies turned to single-use sachets because of the low cost of production to advertise their company name and the convenience of their consumers.

Sachets are inexpensive but have a negative impact on towns and rivers with many people still living below the poverty line. No garbage collection services are available, regardless of the 2000 Ecological Solid Waste Management Act. Frontline officials are not informed about or how to implement proper waste management.

More than 50 countries are taking action to reduce plastic pollution in the world: https://wedocs.unep.org/bitstream/handle/20.500.11822/25496/singleUsePlastic_sustainability.pdf?sequence=1&isAllowed=y

5. UN Involvement

The UN is facing the problem of ocean plastic pollution in several of their conferences and they have come up with possible solutions to reduce plastic pollution.

First of all, It is part of one of the global goals that were set by the world leaders in 2015 to make the world a better place by 2030. The global goal was the fourteenth: “life below water”. In fact, this goal aimed to conserve and sustainably use the oceans, seas and marine resources for sustainable development and stated: “Healthy oceans and seas are essential to our existence. They cover 70 percent of our planet and we rely on them for food, energy and water. Yet, we have managed to do tremendous damage to these precious resources. We must protect them by eliminating pollution and overfishing and immediately start to responsibly manage and protect all marine life around the world.” (<https://www.globalgoals.org/>)

The two points of this global goal that talks about the problem of plastic pollution are the following : “Marine pollution” (“by 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution”) and “Protect and restore ecosystems” (by 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans). (<https://www.globalgoals.org/>)



Moreover, the UN also launched the UN Environment's Global Plastics Platform. For that occasion, the UN Environment and the European Commission hosted an event alongside the UN General Assembly. The aim of that “network is to encourage new commitments to reduce plastic pollution and supporting the transition to a more circular economy”.

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