Committee:

Topic: The question of single use plastics

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Summary

Plastic is everywhere in our modern world because of its convenience and durability and half of all plastic waste globally is packaging which is often discarded almost immediately after its use. Single use plastics are plastics that are often used once before they are thrown away, this includes items such as plastic straws, cigarette butts and plastic bottles. Single use plastics have come under much scrutiny recently because plastic is not biodegradable and is hard to recycle meaning it often washes into our oceans harming wildlife. Furthermore, single use plastics can be consumed by animals and enter the food chain which means that humans may also eat micro plastics. Governments and bodies such as the United Nations Environment Programme (UNEP) are now taking steps to reduce the use of single use plastics to save our environment from this crisis. If we do not reach a resolution soon to curb the use of single-use plastic, there will be more plastic in the ocean than fish by 2050 and the environmental impact on our earth will be catastrophic.

Since the advent of plastics in 1907 by Leo Bakeland, they have grown in popularity. This growth was escalated in World War II as Nylon was used for parachutes, ropes and body armour and Plexiglass became an alternative to glass for aircraft windows. The most common form of single use plastic is packaging, in 1982 the US supermarket giants Safeway and Kroger swapped out paper bags for plastic ones and this trend has only begun to be reversed with single-use plastic bag taxes and bans. It is estimated that 1 to 5 trillion plastic bags are consumed worldwide each year, this amounts to almost 10 million plastic bags per minute which causes disastrous environmental damage.

There are some solutions that can be followed to battle the plastic crisis such as bans on plastics and styrofoams such as the Kenyan total ban on plastic bags. Alternatively taxes could be levied to deter consumers from plastic options.

In addition, government bodies and the UN need to work with corporations in order to encourage the development of alternatives to normal plastic such as biodegradable plastics made which are plant-based. Moreover, the public should be educated about the harm of single-use plastics through online campaigns and in national curriculums so they can make informed choices and avoid single-use plastics. One thing is clear, there is a desperate need for international agreement to solve this issue as single-use plastics are a scourge on our planet which can only be stopped if we all bring change.

Definition of Key Terms

Plastic: a synthetic material which is produced from organic polymers such as polyethylene which are often derived from fossil hydrocarbons.

Single use plastic: plastic which is only used once or for a short period of time before being thrown away or recycled.

Biodegradable: an object able to be decomposed (broken down) by bacteria or other living organisms therefore avoiding pollution.

Micro plastics: small plastic particles in the environment that are smaller than 1μm.

Styrofoam: a type of expanded polystyrene (plastic) that is typically used for food containers.

PET: a type of plastic widely used to make polyester fibres and bottles.

Great Pacific Garbage Patch: a collection of plastic and floating trash in the North Pacific Ocean.

Background Information

Plastics cause significant damage in our world in many ways and therefore attempts to mitigate the use of single-use plastics is essential. Single use plastics have become ubiquitous in daily life and it is estimated that one to 5 trillion plastic bags are consumed worldwide each year, this amounts to almost 10 million plastic bags per minute. If tied together, all these plastic bags could be wrapped around the world seven times every hour. Since so much plastic waste is being created, to avert a crisis, plastic must be disposed of and managed correctly; however, according to recent estimates: 79% of the plastic waste ever produced now sits in landfills, dumps or in the environment, while about 12% has been incinerated and only 9% has been recycled.

Single use plastics have negative economic consequences as well because they are often an eyesore which can deter tourists from visiting areas which are polluted by plastic. According to a recent study, plastic litter in the Asia-Pacific region costs its tourism, fishing and shipping industries $1.3 billion per year. In Europe, cleaning plastic waste from coasts and beaches costs about €630 million per year and these costs are set to rise, however, such investment is necessary to ensure tourists visit beaches and that wildlife is not endangered by plastics. Studies estimate that the total economic damage caused by plastic in the world's marine ecosystem is at least $13 billion every year.

Even more significant than the economic threats of single use plastics are the health and environmental threats it poses. Styrofoam (a type of plastic often used in food containers), contains toxic chemicals such as benzene and styrene which cause cancer and other health issues for the nervous, reproductive and respiratory systems. Some studies have even shown that the toxins in styrofoam containers can transfer to the food and drink they hold. In low income areas, waste including plastics is burnt for warmth or cooking and the fumes from the plastics are toxic emissions which are dangerous for health. Moreover, the accumulation of plastic bags and other plastic litter can block sewage systems and other waterways which provides an optimum breeding ground for pests such as mosquitoes; this can increase the risk of diseases such as malaria.

Each year, according to the United Nations Environment Programme (UNEP) approximately eight million tonnes of plastic end up in the ocean. This marine litter harms over 800 aquatic species, 15 of which are endangered. These animals frequently consume plastic waste in the sea and this plastic enters into our food chain through our consumption of fish. In addition, plastic waste kills many animals which find themselves tangled in it or if they consume too much plastic.

It is essential that action is taken to tackle the use of single use plastics as they have serious impacts on health, the economy and the environment. Due to the prevalence of plastics in our world, this crisis must be stopped before it grows larger.

Major Countries and Organisations Involved

Single use plastic is a global issue and more than 115 countries have introduced bans and levies to curb single-use plastic waste. Africa is the continent where the largest number of countries (25 countries as of 2017) have instituted a total ban on the production and use of plastic bans. Also, the European Council, European Parliament and European Commission reached a political agreement in December 2017 to set a target for packaging recycling at 65% by 2025 and a specific target for plastic packaging recycling at 50% by 2025. China is significant for global recycling as imports into China account for 56% (by weight) of the worldwide imports of waste plastic destined for recycling.

The UN body involved in tackling the plastic crisis is the UNEP (United Nations Environment Programme). In 2018, the UNEP joined forces with the Ellen MacArthur Foundation to tackle the issue of single-use plastics by lobbying decision makers to redesign plastics which can be reused and last longer rather than being single-use. It also launched the 2017 Clean Seas campaign which targets plastic waste in our oceans. In addition the UNEP lobbies governments to implement new laws reducing single-use plastics to confront the problem.

Timeline of Events

Date	Description
1907	The first totally synthetic plastic was called Bakelite and made by Leo Baekeland.
1939	World War Two created a surge in plastic production in the USA. Nylon was used during for parachutes, ropes and body armour and Plexiglass became an alternative to glass for aircraft windows.
1970	In Sweden stores started to charge consumers for plastic and paper carrier bags (about $0.24) . Since then many countries have followed suit such as Germany and the UK introducing a charge on plastic bags.
1972	The first recycling mill to accept residential plastics began operations in Pennsylvania.
1982	Large supermarket chains Safeway and Kroger replaced their paper bags with plastic ones.
1982	Plastics became significant in medicine as the first artificial heart made mainly of polyurethane was implanted in a human.
1988	Poor drainage resulting from plastic bag litter clogging drains contributed to devastating floods in Bangladesh, causing several deaths as two-thirds of the country was submerged
1997	The Great Pacific Garbage Patch was discovered, this made more people view plastics negatively.
2002	The first national ban on single use plastic bags was in Bangladesh.
2017	The UNEP launched the Clean Seas campaign to fight against Marin plastic litter, this campaign includes governments the public and the private sector.
2018	The UNEP Ocean Conference was held and the Global Commitment was launched which aims for a circular economy for plastics so that plastics can be used and reused for longer.

2019	At the Basel Conference, governments amended the Basel Convention to include plastic waste in a legally-binding framework which will better regulate trade in plastic waste.
2050	If current consumption and waste management practices continue, by 2050 there will be around 12 billion tonnes of plastic waste in landfills and the environment.

Relevant UN Treaties and Events

At least 100 member nations of the UN have supported calls for a UN treaty on plastic so there can be a unified attempt to reduce plastic pollution.

The UNEP launched the ongoing '#CleanSeas' campaign in February 2017, involving the public, governments and the private sector in the fight against marine plastic litter. Over five years, this movement aims to address the root-cause of marine litter by targeting the production and consumption of single-use plastic. Over the past two years, the Clean Seas campaign has become one of the largest global campaigns for tackling marine plastic pollution with national commitments from 60 countries covering more than 60% of the world's coastlines.

At the UNEP Ocean Conference in Bali in 2018, the New Plastics Economy launched the Global Commitment with the Ellen MacArthur Foundation. The Ellen MacArthur Foundation leads lobbying of the private sector (the business signatories and endorsers), and the UNEP leads the engagement with the governments.The Global Commitment has already gained over 500 signatories who have pledged to begin building a circular economy for plastic where plastic is redesigned to last longer and be reused rather than thrown away. The Global Commitment also wants to phase out items such as undetectable black pigments in plastics and single-use plastic bags and straws. The signatories include companies representing 20% of all plastic packaging produced globally, such as L'Oréal, PepsiCo, The Coca-Cola Company and Unilever to name a few.

In 2019 the UN Environmental Assembly gathered in Nairobi and talks were held about plastic waste, the United States opposed a binding treaty.

Previous Attempts to solve the Issue

In several developed and developing countries, the introduction of Extended Producer Responsibility and deposit-return schemes have proven effective in reducing littering from PET bottles while boosting the recycling sector. Germany, Japan and South Africa are among many successful examples where the responsibility for recycling used PET bottles is embraced by manufacturers (either voluntarily or by act of law).

In 1998, the Irish Department of the Environment, Heritage and Local Government commissioned a study to assess how to reduce the use of plastic bags and to estimate consumers' maximum willingness to pay for a plastic bag. The assessment revealed that on average people used 328 bags per person per year and consumers' were willing to pay around €0.024 for a plastic bag. Consequently, in 2002 the Irish government introduced a tax on plastic bags (called the "PlasTax"), the price was set six times higher than the estimated willingness to pay, at €0.15, with the aim to deter people from buying single use plastic bags. To reduce public resistance, a campaign was launched to educate people on the reasons for the tax such as the environmental benefits. As a result, consumers were in favour of increased environmental protection. Within one year, the use of plastic bags in Ireland dropped by more than 90% and the consumption per person fell from 328 plastic bags per year to 21 bags.

However, unlike the success that Ireland had in its tax on plastic bags, South Africa's attempt was less successful as there were no public awareness campaigns on why the levy was being implemented, as a result, consumers started to budget the small charge for plastic bags into their shopping and the number of bags consumed returned to pre-tax levels.

Possible Solutions

Bans on plastic bags and Styrofoam items can effectively counter some of the symptoms of plastic overuse. So far 115 countries have implemented some sort of ban on plastic packaging. Alternately, taxes such as the "PlasTax" in Ireland could be used to deter consumers from plastic options.

Disposal and waste management needs to be well implemented so that waste can be sorted at source into plastic and other materials and then transported to a safe storage place for it to be recycled. New cost-effective recycling of materials should be developed to encourage more recycling and reduce landfills.

It is important for governments and organisations to cooperate with industry, to support and incentivise the development and promotion of sustainable alternatives to single-use plastics. Kenya banned all plastic bags in 2017 and the government encouraged retailers to offer alternatives such as cloth bags which made the transition to life without plastic bags much easier. In addition, there are many alternatives to single-use plastics such as biodegradable plastics made from starch to paper paper bags and straws.

Social awareness and education are crucial for changes in consumer behaviour and attitudes. Public awareness of single use plastics can be increased through national curriculums and online social media campaigns.

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