

Forum:	Environmental Commission (EC)
Issue:	Limiting the Environmental Impact of Microplastics
Student Officer:	Konstantinos Goussios
Position:	Deputy President

PERSONAL INTRODUCTION

Dear delegates,

My name is Konstantinos Goussios, and I have been granted the chance to chair the Environmental Commission at this conference. I am sixteen years old and an eleventh-grade student at the American College of Greece. I am honored to have the chance to chair in this committee for my first chairing experience, especially considering that it is a beginners-friendly committee.

I am grateful to have the opportunity to participate in an extracurricular activity such as MUN. I believe that it is one of the rare instances in which we are offered a way to actively engage in world politics, find solutions considering global issues and express our approaches concerning certain subjects. The environment is an extremely important aspect of our lives, and the problems plaguing it cannot be ignored. I hope this study guide permits you to understand the topic fully, and gives you enough information to enable you to conduct further research about it. In case you have any issues with it, I will be happy to help you out, so do not hesitate to contact me at k.gousios@acg.edu.

I am looking forward to cooperating with all of you!

Kind Regards,

Konstantinos

TOPIC INTRODUCTION

The issue of microplastics is a severe problem that falls under the category of environmental issues. Microplastics are tiny pieces of plastics that can be found in the environment. Their presence poses significant threats to the well-being of animals and humans alike. Even though their exact impact has not been extensively studied, as they have only been subject to research for the past few years, it is safe to say that they constitute a form of plastic pollution.

Microplastics are created when larger pieces of plastic material, such as plastic bags, bottles, or beads, break down into small fragments. This usually happens when these plastic products are inappropriately disposed of. When plastic is not treated, recycled,

or burned, it remains in the environment for up to 500 years¹. It is extremely frequent for plastic garbage to find its way into rivers, and from there, end up in the ocean or get washed ashore, polluting the coasts. Also, radiation from the sun triggers the breakdown of plastics into microplastics. These can be consumed by wild or domesticated animals, causing disruptions in the food chain. Since microplastics cannot break down into natural substances, they tend to accumulate in the tissues of these animals. Recent studies have shown traces of microplastics in human blood, thus, proving that we are directly affected by them.

The effects of their presence are not widely known since this problem has not been closely examined for an adequate amount of time. However, they certainly have health implications on animals and humans with a sufficiently high concentration of them in their tissues. It is speculated that the normal development of the organisms is disrupted when an increased number of microplastics is recorded². Sufficient action is yet to be taken, and the resources allocated to combat the problem so far are not enough on behalf of the international community.

Owing to the effects of microplastic pollution, globally coordinated efforts must take place to mitigate the issue. As it is a matter of global significance, there is not a single government able to bring about a satisfactory solution. There is a need for legislation covering the needs of every country and actions which will address the problem's cause and the damage that has already occurred.

DEFINITION OF KEY TERMS

Bioaccumulation

“The accumulation over time of a substance and especially a contaminant (such as a pesticide or heavy metal) in a living organism”³

Biodegradation

The process during which microorganisms can degrade materials to natural substances, such as water or carbon dioxide. Materials that can be subject to biodegradation are referred to as biodegradable⁴.

¹How long it takes everyday items to decompose – *The Waste Management & Recycling Blog*. <https://www.forgerecycling.co.uk/blog/how-long-it-takes-everyday-items-to-decompose/> Accessed 5 January 2023

² Brandon, Anja, and Britta Baechler. ‘How Microplastics Impact Human Health’. *Ocean Conservancy*, 26 January 2022, Accessed 13 December 2022 <https://oceanconservancy.org/blog/2022/01/26/microplastics-impact-human-health/>

³ *Definition of BIOACCUMULATION*. <https://www.merriam-webster.com/dictionary/bioaccumulation> Accessed 6 January 2023

⁴ *Biodegradation - an overview | ScienceDirect Topics*. <https://www.sciencedirect.com/topics/chemistry/biodegradation> . Accessed 10 December 2022.

Fossil fuels

A resource formed in the earth, consisting of remains of plants or animals.⁵⁶

Microplastics

Pieces of plastic measuring a length of at most five millimeters. They may be created when larger pieces of plastic disintegrate⁷.

Plastic

“A light strong material that is produced by chemical processes and can be formed into shapes when heated”⁸

Plastic pollution

The contamination of natural ecosystems by accumulating plastic materials, which can cause problems to wildlife and humans alike⁹.

Recycling

The process in which items that could be discarded and considered garbage are repurposed into useful material and reused¹⁰.

Sustainability

“The ability to maintain or support a process continuously over time”. In this context, it refers to the maintenance of human activities without inflicting severe damage to the natural environment ¹¹.

⁵ Definition of FOSSIL FUEL. <https://www.merriam-webster.com/dictionary/fossil+fuel>. Accessed 8 January 2023

⁶ Since most of these resources need millions of years to form, they are essentially non-renewable. This means that there is a limited amount available, and once it is exhausted, they will not be easily accessible.

⁷ US Department of Commerce, National Oceanic and Atmospheric Administration. ‘What Are Microplastics?’ *National Ocean Service*, <https://oceanservice.noaa.gov/facts/microplastics.html> Accessed 10 December 2022

⁸ Plastic (noun)- Definition, pictures, pronunciation and usage notes | Oxford Advanced Learner’s Dictionary at OxfordLearnersDictionaries.com’. *Oxford Learners’ Dictionary*, https://www.oxfordlearnersdictionaries.com/definition/english/plastic_1?q=plastic Accessed 10 December 2022.

⁹ Charles, Moore. ‘Plastic Pollution | Definition, Sources, Effects, Solutions, & Facts | Britannica’. *Britannica*, <https://www.britannica.com/science/plastic-pollution> Accessed 10 December 2022.

¹⁰ US EPA, OLEM. ‘The U.S. Recycling System’. *United States Environmental Protection Agency*, 17 April 2019, <https://www.epa.gov/recyclingstrategy/us-recycling-system> Accessed 10 December 2022

¹¹ Mollenkamp, Daniel Thomas. What is Sustainability? How Sustainabilities Work, Benefits, and Example, 23 June 2022 <https://www.investopedia.com/terms/s/sustainability.asp> Accessed 6 January 2023

BACKGROUND INFORMATION

Problems with microplastics

Microplastics are plastic particles measuring less than 5mm in size that are generated by the breakdown of larger plastic items, as well as by the microbeads which are added to personal care products and washing detergents. They are becoming an issue because of their negative impacts on the environment and human health.

One of the main reasons microplastics are an issue is because of their persistence in the environment. Plastic is not biodegradable, which means it does not break down into natural substances. Instead, plastic breaks down into smaller and smaller particles, including microplastics, that can persist in the environment for hundreds of years. These tiny particles can be transported by wind and water, and can be found in oceans, rivers, and even in the air we breathe.

Another reason microplastics are an issue is because of their ability to absorb toxic chemicals. Microplastics can act as a sponge for pollutants in the environment such as pesticides, and can carry them into the food chain. Research has shown that microplastics have been found in seafood, such as fish and shellfish, and can be ingested by humans, which may have potential health risks.

Additionally, microplastics are harmful to marine life and wildlife. Marine animals can mistake microplastics for food and ingest them, which can cause physical harm and block their digestive tracts. This can lead to starvation and death. Furthermore, microplastics can also accumulate in the tissue of marine animals, which can lead to long-term health effects.

Lastly, microplastics can also have economic impacts on industries such as fishing and tourism. The presence of microplastics in oceans and rivers can harm marine life, which can lead to declines in fish populations and harm the fishing industry. Additionally, the presence of microplastics on beaches can also harm tourism.

In conclusion, microplastics are an issue because of their persistence in the environment, their ability to absorb toxic chemicals, their harmful effects on marine life and wildlife, and their potential economic impacts on industries such as fishing and tourism. It's important to take action to reduce the amount of microplastics in the environment to prevent further damage.

Economic Impact

Plastic is an affordable material that functions in several fields of the manufacturing, packaging, and transport industries. As such, it is mass-produced and prevalent. While some types of plastic are made of renewable resources and can biodegrade, the vast majority of plastic produced today is based on fossil fuels; thus, it is bound to remain in the environment for hundreds of years since it cannot biodegrade.

It is estimated that the global plastic production market has reached a value of 580 billion USD in 2020¹², with massive implications worldwide. The main producer of plastic, and as such the main profiteer of the plastic industry is China.¹³ However, aside from the extreme revenue brought by the industry, there are significant costs related to plastic pollution¹⁴. There are several indirect losses related to the pollution, such as beach cleaning. In addition, a high degree of ocean microplastic contamination can have a negative impact on the fishing and tourism industry, being responsible for damages and reduced profits.

Since marine animals destined for human consumption can ingest dangerously high levels of microplastics, they may be deemed unsafe for human consumption, inflicting, thus, damages to businesses in the fishing industry and highly polluted landscapes push losses for the tourism industry as well.

Action taken to limit the spread and adverse consequences of widespread microplastic pollution come at a cost as well. The European Union's plan to limit the microbead pollution, for example, has been estimated to cost the cosmetics industry approximately 8 billion dollars each year.¹⁵ It is important to notice that, globally, corporations failing to align with national regulations on microplastic treatment are obliged to pay a penalty, having another burden. In addition, microplastics can have negative consequences on human health, which can strain the healthcare systems of the regions most affected and inflict further costs. Lastly, many governments, local communities, and organizations uptake cleaning campaigns from plastics that prove to be costly.

¹² Tiseo, Ian. 'Topic: Plastics Industry Worldwide'. *Statista*, 21 November 2021, <https://www.statista.com/topics/5266/plastics-industry/>.

¹³ Nofir, <https://nofir.no/en/> Accessed 13 December 2022

¹⁴ It is estimated that the costs inflicted by plastic pollution can reach up to 13 billion dollars in total.

¹⁵ 'Companies Might Find Microplastics Cheap, but the Environment Is Paying the Price'. *Marketplace*, 29 April 2022, <https://www.marketplace.org/2022/04/29/companies-might-find-microplastics-cheap-but-the-environment-is-paying-the-price/>

Environmental impact

Despite microplastics' existing ever since the first plastic items made of fossil fuels started being mass produced in the 1930s¹⁶, the problem regarding pollution due to microplastics was exacerbated in the late 1960s¹⁷. That happened as a new commercial product, called microbeads, was invented and widely distributed. Microbeads are tiny plastic particles deliberately manufactured in order to accommodate the needs of the cosmetics industry. These beads can detach from the main product they are supposed to be a part of and find their way into the ocean, exacerbating the environmental issue. The problem of microplastic infestation has only grown in recent years, which can be attributed to the inappropriate disposal of everyday plastic items. Up to this point, a worrying amount of microplastics has found its way to the ocean. From there, it has been possible for microplastics to reach most parts of the globe. As such, microplastic pollution cannot be detected only near the regions in which plastic



Figure 1: Graph showing how much time different types of plastic need to decompose or disintegrate¹

items are manufactured or used, but in more remote ecosystems as well. This phenomenon has as an effect the disruption of most ecosystems impacted, as well as unforeseen ecological damage. In addition, due to a tremendous increase in the production of plastic items as a whole, alarms have been raised relating to the threat posed by them to human health.

¹⁶ "History of Plastics | Plastics Industry Association." *plastics industry association*, <https://www.plasticsindustry.org/history-plastics> Accessed 4 Dec. 2022.

¹⁷ Perschbacher, Ellen. *History and Evolution of the Microbead* | *International Joint ..* 22 Feb. 2016, <https://www.ijc.org/en/history-and-evolution-microbead> Accessed 4 Dec. 2022.

Considering the fact that microplastics have not been extensively studied thus far, the effects they may have on human and animal health are not yet known.¹⁸ Certain negative aspects of their presence in live animal or human tissue have been, nevertheless, discovered. It is currently speculated that an increased microplastic presence can cause irritation, cause fertility problems or, in extreme cases it can cause cancer. Also, it is speculated that they may be responsible for disrupting the natural development of individuals, due to the accelerated cell death and inflammation they cause. Microplastics can also block the digestive tracks of organisms. In addition, microplastic particles can function as means for pathogens to enter the animal and human organisms and cause further disease. Larger particles comprise a greater risk, since it is easier for the toxic chemical properties of the materials, they are made of to be unleashed.

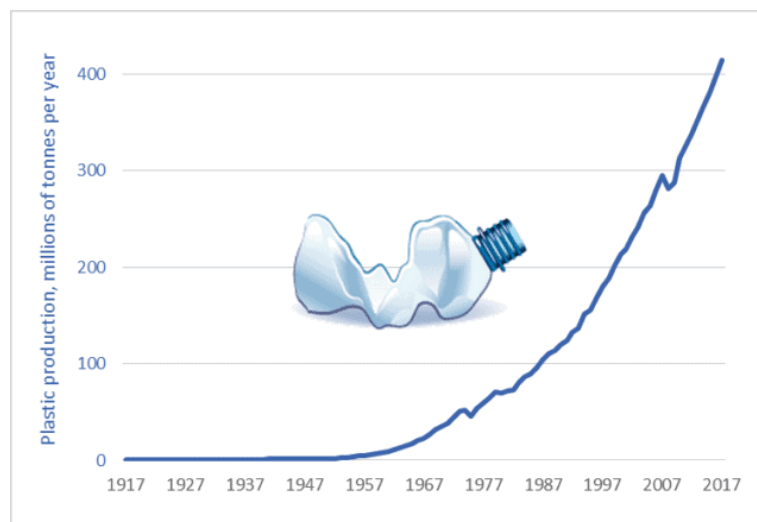


Figure 2: Plastic Production has increased massively in the past few years

In addition, microplastics are able to carry toxic substances, such as pollutants or pesticides which pose a great danger to the health of many living organisms. In case a high concentration of these substances is found in the bodies of livestock, they can be considered dangerous for human consumption and, as such, pose a food security risk.

The nature of microplastics, which prevents them from being decomposed, can be a cause of long-term adverse effects on all kinds of wildlife, this way posing a massive threat to biodiversity. Recently, microplastics were first confirmed to have established a presence in the human bloodstream¹⁹. This phenomenon has raised an

¹⁹ Carrington, Damian. "Microplastics Found in Human Blood for First Time." *The Guardian*, Guardian News and Media, 24 Mar. 2022, www.theguardian.com/environment/2022/mar/24/microplastics-found-in-human-blood-for-first-time

alarm in the scientific community, whose demands for a coordinated effort to transition away from harmful plastic materials has only intensified.

Even in this case, it appears that marine life is in greater danger, as the concentration of microplastics in the ocean is noticeably higher than on land. In the ocean, microplastics can enter more easily inside living organisms and cause problems similar to ones a human can experience.

The microplastic contamination issue can be linked to a number of other problems tormenting the environment, related to the often-unsustainable production of plastic items and a general preference for them over eco-friendly alternatives. It is possible to observe this trend when taking a look at the fast fashion and cosmetics industries. A percentage of plastic waste generated by More Economically Developed Countries (MEDCs) gets exported to Less Economically Developed Countries (LEDCs), where it is being mismanaged and find its way to the ocean.²⁰

Plastic items that can break down into microplastics are not always appropriately discarded. Ideally, all plastic products should be recycled. However, this is not always feasible due to economic barriers. Burning plastic is a more widespread alternative, but it is accompanied by the emission of greenhouse gasses into the atmosphere and is generally not recommended for the disposal of large quantities of plastic.

Health implications

From the research that has taken place thus far, we can say that microplastics have several implications on human health. Firstly, the ingestion of microplastics is one of the main ways in which human health can be affected. Microplastics have been found in a variety of food sources, including seafood, table salt, and even tap water. When ingested, these tiny particles can cause damage to the digestive system and can lead to various gastrointestinal problems, such as inflammation and blockages. Studies have also suggested that microplastics can transfer pollutants and chemicals into the body, which can cause various health problems including cancer, fertility problems and other diseases.

Another way in which microplastics can affect human health is through inhalation. Microplastics can be present in the air we breathe, and when inhaled, they can cause respiratory problems, such as inflammation and irritation of the lungs. This is especially concerning for people who work in industries where microplastics are present in the air, such as in manufacturing or recycling facilities.

Microplastics can also affect human health through skin contact. Some personal care products, such as exfoliating scrubs and toothpaste, contain microplastics. When

²⁰ Reaching up to 10% ~ Ritchie, Hannah. 'Ocean plastics: How much do rich countries contribute by shipping their waste overseas?' *Our World in Data*, <https://ourworldindata.org/plastic-waste-trade>, 11 October 2022

these products are used, the microplastics can be absorbed through the skin, which can lead to irritation and other skin problems.

It is important to note that while research on the health implications of microplastics is still ongoing, it is clear that they can have a significant impact on human health. Ingestion, inhalation, and skin contact are the main ways in which microplastics can affect human health, and the potential risks should not be underestimated.

MAJOR COUNTRIES AND ORGANIZATIONS INVOLVED

China

China's economy has been based on the exports sector for the past few decades. Part of these exports consists of mass-produced, low-cost, disposable plastic items and fast fashion products, which are rarely recycled or otherwise appropriately disposed of. This has led China to be the main producer of plastic items used in most MEDCs.

China also faces severe domestic plastic pollution issues. Large quantities of mismanaged plastic, which break up into microplastic particles, can be found in the country's largest, and vital for its survival, river, the Yangtze. This has implications both on the local population, but on one of the most important river ecosystems in the region. In addition, most of this pollution inevitably ends up in the East China sea, after passing from the estuary to the ocean.

China had been responsible for most of plastic waste imports as well, until an almost total ban came in effect in 2018. As already mentioned, the country faces massive domestic plastic pollution issues. Based on that, the government of China has implemented an eco-friendly, yet inadequate, climate and environment policy. China has not hesitated to take noticeable action in order to increase the plastic recycling rate, incinerate plastic and limit the use of single-use plastic items, such as plastic bags. Considering the immense size of the country and the influence it has on the sector of plastic pollution, China's 2008 total ban on plastic bags can be characterized quite impactful.²¹

Egypt

Egypt is a densely populated country along the Nile river. This, combined with the low level of per capita income, as well as the insufficient mechanisms dedicated to the monitoring and disposal of plastic items, has led to a tremendous increase in the river's plastic pollution discharge into the Mediterranean Sea.

²¹ 'Study: Where Are Plastic Bags Banned Around the World?' *Waste360*, 5 June 2019, <https://www.waste360.com/plastics/study-where-are-plastic-bags-banned-around-world> Accessed 6 January 2023

Today, Egypt is considered the largest plastic polluter in the Mediterranean, accounting for a third of all pollution that enters the sea.²² In addition, it can be considered the largest plastic waste producer in the Arab World. This waste production, combined with the inadequate national infrastructure aimed to combat the problem has led to pollution issues. Most notably, the Mediterranean Sea and the Nile river have been extensively damaged. The domestic consequences of Egypt's actions have been severe, as the country's primary water source becomes less reliable. Diseases have also established a presence due to the ecological damage inflicted by the pollution.

Despite the country's small per capita waste production, Egypt has become one of the worst-performing countries in absolute terms of plastic emitted into the sea. Egypt has not taken sufficient measures to tackle the issue of plastic pollution, but there has been some recorded progress, especially considering the country's nationwide plastic bag ban. Egypt has also launched an awareness campaign in order to better inform its population about the environmental damage inflicted by plastic pollution.

India

India is one of the most populous countries in the world. As a result of its large size, low level of economic development and lack of regulations, India suffers extensively due to microplastic pollution, especially in the Bay of Bengal. The rivers discharging there are among the most polluted in the world.

India has made efforts to change plastic production from a fossil fuel-based model to one that depends more on renewable resources. In addition, the country has promoted the use of biodegradable plastic products in order to limit their future impact on the environment after banning plastic bags in 2002²³. This move was enacted after it became apparent that microplastic pollution can have negative consequences on the country's agricultural production. However, as these measures are on the right path, they are insufficient and need to be boosted.

New Zealand

New Zealand has proceeded to the implementation of extensive restrictions regarding the distribution of certain single-use plastic items. The country is determined to mitigate the issue of plastic pollution, especially considering its highly wasteful history. New Zealand has set a plan to ban most single-use plastics before 2025, in a ban similar to the one implemented by the European Union. Also, they have been at the forefront

²² Marine-Plastic Pollution Is Growing — and Egypt Is a Big Factor on a Global Scale'. *Enterprise*, <https://enterprise.press/greeneconomys/marine-plastic-pollution-growing-egypt-big-factor-global-scale/> 15 March 2022, Accessed 6 January 2023

²³ 'Study: Where Are Plastic Bags Banned Around the World?' *Waste360*, 5 June 2019, <https://www.waste360.com/plastics/study-where-are-plastic-bags-banned-around-world> Accessed 6 January 2023

of the transition towards biodegradable and other non-harmful sources of plastic. Despite New Zealand's relatively small size, it has taken considerable action.

United States of America (USA)

The United States are among the largest per capita consumers of plastic. The country has produced disproportionate amounts of plastic litter, part of which has been exported to LEDCs, where it can be improperly treated and end up polluting water bodies.

The US have taken some steps to combat plastic pollution. Noticeable examples of this action are the nationwide ban on microbeads, and the state or local bans related to plastic bags. The cities of Seattle and San Francisco have implemented regional plastic straw bans, aiming to limit their use, while several states have designated bans on single-use plastic bags. The United States have also invested in research towards renewable plastic resources, such as biodegradable alternatives.

The measures taken by the United States certainly have an impact, but it is necessary to take more precautions in order to limit the adverse effects of microplastic pollution.

Association of South East Asian Nations (ASEAN)

Since ASEAN is not a single country, each of its members maintains a distinct policy related to microplastics and plastic waste imports. However, they all acknowledge that they face immense danger due to microplastic pollution, and the union's response strategy acknowledges each member's needs.

After the 2018 Chinese plastic waste import ban, a few ASEAN countries, most notably Malaysia, stepped up their own plastic waste imports to make up for the difference. Nowadays, massive quantities of plastic find their way into the ocean from the rivers or the industrial discharge facilities of ASEAN members. It is worth considering that part of this waste was generated abroad, in MEDCs, from where it was exported to ASEAN countries.

ASEAN countries have agreed to cooperate on an international level. They have drawn guidelines on how they can collectively fight plastic pollution (such as the ASEAN Coordinating Centre for Transboundary Haze Pollution Control (ACCTHPC)), by phasing out harmful plastic items and better monitoring maritime plastic pollution. In addition, some of these countries have implemented decisions on a national level. Malaysia has, despite the country's plastic imports, stepped down its domestic single-use plastic items consumption by banning plastic straws and bags.

European Union

The European Union has acknowledged the damaging effects of plastic pollution and has initiated a bold plan to limit it. One example of this plan is the ban on certain disposable, single-use food utensils, which came into effect in 2021. Acknowledging

that the EU does not produce large amounts of plastic, nor is it responsible for the vast majority of microplastics entering the ocean. The European Union influences LEDCs' policies concerning plastic production to a great extent. This is possible due to its economic and political power, its ability to pass legislation with a global impact, and its imports. Also, the EU, is hosting many of the headquarters of the main biodegradable plastic companies.



Figure 3: Plastic Production map; Red signifies high production of mismanaged plastics whereas blue is lower. Most mismanaged plastic is produced in China, India or ASEAN member state

United Nations Environment Programme (UNEP)

The UN Environment Programme is the largest UN institution to address issues concerning the environment. The organization has repeatedly monitored the effects of pollution and tried to implement global measures with the help of UN member states to mitigate the issue of pollution. The United Nations Environment Programme, as an international organization, has conducted extensive research and raised awareness globally concerning the issue. The organization has encouraged all governments to take action and provide the necessary framework to enable this. The institution has also played a role in the coordination of international responses.

TIMELINE OF EVENTS

DATE	DESCRIPTION OF EVENT
1 May 1862	The first plastic-like substance, named parkesine, is presented to the world.
1 December 1909	The first form of modern plastic, bakelite, made of fossil fuels, is patented in New York.
21 March 1972	The first scientific article mentioning the presence of microplastics is published.
21 February 2017	The UN launches the Clean Seas Campaign.
1 July 2017	Seattle becomes the first US State to ban plastic straws.
30 August 2017	UNEP adopts the Global Plan of Action for the Protection of the Marine Environment from Land-based Activities (GPA).
1 January 2018	The Chinese plastic waste import ban comes into effect.
16 November 2018	First observation of plastic ingested by Amazon marine life.
3 July 2021	The EU single use plastic utensils ban comes into effect.
2 March 2022	The UN plastic pollution mitigation agreement is implemented.
25 March 2022	Microplastics are first detected in human blood.

PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

EU ban on certain plastic products

In 2021, the European Union implemented a massive ban concerning plastic items considered particularly dangerous. A decision regarding the prohibition of selling plastic items that pose risk of contamination and destruction of the natural environment in European markets was taken. As such, certain single-use plastic utensils, straws, food trays and cutlery are no longer available in EU stores. This move was motivated by the perceived need to phase out plastic products with a severe environmental footprint. The ban has resulted in a tremendous decline in the use of plastic utensils, and a rise in more ecologically friendly alternatives, such as wooden forks and knives and paper straws. In addition, the EU has encouraged individual member states to transition away from plastic bags.

UN Agreement for a plastic pollution mitigation treaty

In a landmark example of global cooperation, 175 UN member states expressed their will to draft a legally binding international agreement by 2024 concerning the issue of plastic pollution. This measure, despite being in its early stages, is speculated to enhance global cooperation toward the mitigation of problems caused by plastic pollution and the gradual replacement of plastic products with eco-friendly ones.

Clean Seas Campaign

The Clean Seas Campaign is a global initiative launched by the United Nations Environment Programme (UNEP) in 2017 to combat marine litter and microplastics. The campaign aims to raise awareness about the issue of plastic pollution in oceans and encourage governments, industry, civil society, and individuals to take action to reduce plastic pollution. The campaign focuses on three main areas: Behavior change, Innovation, and Policy. The campaign encourages countries to join the initiative and make a national commitment to reduce marine litter and microplastics, and provides resources and support for countries to implement their commitments. As of 2021, more than 60 countries have joined the campaign and committed to take action to reduce marine litter and microplastics. The campaign also works with a range of partners including international organizations, civil society, and the private sector to raise awareness and take action on marine litter and microplastics. It also supports research and monitoring of marine litter and microplastics and provides guidance for the development of national strategies and action plans on marine litter and microplastics.

Chinese plastic use reduction campaign

In the new five-year internal policy plan set forth by China in 2021, it is pointed out that plastic pollution constitutes a major problem tormenting not only the country, but as its leadership acknowledged, the world as a whole. Thus, China increased its recycling and incinerating potential, implemented legislation limiting the use of single-plastic items and introduced policies relating to the transition towards a more sustainable production chain, focusing less on fossil-derived plastic and more on alternative sources such as wood or bamboo.

POSSIBLE SOLUTIONS

Enforce Strict Monitoring Concerning the Production and Disposal of Plastic Products

Enforcing strict monitoring of the production and disposal of plastic products can play a significant role in reducing the negative economic impacts of microplastics. This could include regulations that require manufacturers to disclose the types and amounts of microplastics used in their products, setting limits on the number of microplastics that can be released into the environment, requiring manufacturers to use environmentally-friendly alternatives to microplastics when possible, imposing penalties or fines on companies that do not comply with these regulations, and implementing a monitoring system that tracks the production and disposal of plastic products to ensure compliance. By implementing these measures, governments can reduce the number of microplastics that enter the environment and help mitigate the negative economic impacts of microplastics, and also improve the environmental health and sustainable development goals.

Enable the transition away from single-use plastics

Enabling the transition away from single-use plastics can play an important role in reducing the negative impacts of microplastics on the environment and the economy. One way to achieve this is by implementing policies and initiatives that encourage the use of reusable and biodegradable alternatives to single-use plastics.

For example, governments can implement taxes or fees on single-use plastics which can make reusable alternatives more cost-competitive. This can be an effective way to shift consumer and industry behavior towards more sustainable options. Additionally, incentives can be offered to businesses that adopt environmentally-friendly practices, such as switching to reusable packaging, this can also help to promote such practices.

Another way to encourage the transition away from single-use plastics is through education and awareness campaigns. These campaigns can be used to inform consumers about the environmental impact of single-use plastics and the benefits of using reusable alternatives. This can help to change consumer habits and reduce demand for single-use plastics.

Governments can also take more drastic measures such as banning certain types of single-use plastics, such as plastic bags or straws. This can help to reduce the amount of microplastics entering the environment by reducing the total amount of plastic being used.

Lastly, encouraging the development and use of biodegradable plastics and other alternatives can also be an effective way to reduce the environmental impact of single-use plastics. Biodegradable plastics are designed to break down in the environment, which can help to reduce the amount of microplastics entering the environment. By

taking these steps, governments and businesses can help to shift consumer and industry behavior away from single-use plastics and towards more sustainable alternatives. This can help reduce the amount of microplastics entering the environment and the associated economic costs, and also promote the circular economy and reduce the greenhouse gas emissions from the plastic industry.

Launch an Environment Restoration and Microplastic Pollution Mitigation Campaign

Launching an environment restoration and microplastic pollution mitigation campaign can be an effective way to address the negative impacts of microplastics on the environment and the economy. Such a campaign would require collaboration between government agencies, businesses, non-profit organizations, and the public to be successful.

One important aspect of the campaign would be to conduct clean-up and restoration efforts to remove microplastics from the environment. This would involve identifying areas where microplastics are concentrated, such as beaches or waterways, and then organizing volunteer clean-up events or hiring specialized companies to remove the microplastics. This will not only help to reduce the amount of microplastics in the environment but also improve the overall health of ecosystems.

Additionally, research and monitoring programs would be an essential aspect of the campaign. These programs would be used to better understand the distribution and impacts of microplastics in the environment. This would enable scientists and policymakers to make more informed decisions on how to address the issue of microplastic pollution.

Public education and awareness campaigns would also play a key role in the campaign. These campaigns would be used to inform the public about the issue of microplastic pollution and ways to reduce their own use of single-use plastics. This could include providing information on the environmental impacts of microplastics, the benefits of using reusable alternatives and how to properly dispose of plastics to avoid them entering the environment.

Another important aspect of the campaign would be to encourage the use of biodegradable plastics and other alternatives. This can be done by investing in technologies that can help to reduce or remove microplastics from the environment and promoting the use of biodegradable plastics in industries.

Furthermore, governments and businesses can also launch regulations to reduce the amount of microplastics entering the environment, such as taxes or bans on certain single-use plastics. Encouraging the use of reusable products and promoting sustainable practices in industries can also be an effective way to reduce the environmental impact of microplastics.

Overall, launching an environment restoration and microplastic pollution mitigation campaign is a significant undertaking, but the benefits to the environment and the economy make it a worthwhile endeavor. Investing in such a campaign will not only help to mitigate the negative impacts of microplastics but also support the sustainable development goals.

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