



Exploring Potential Legal, Policy and Management Approaches to Enhance Marine Plastic Regulation

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Abstract: *This paper proposes options for regulating marine plastic pollution in the upcoming global plastic treaty. The paper highlights the multifaceted nature of plastic pollution and emphasizes the need for a comprehensive approach to regulating marine plastic pollution. It examines potential amendments to the existing international legal framework, presents target and action-oriented international measures, and explores the significance of soft law agreements, regional cooperation, and rivers-oriented regulation. The paper concludes by discussing the potential of integrating these measures into the proposed plastic treaty. These options provide a starting point for global discussions on marine plastic pollution regulation and aim to inform the development of effective and efficient policies to address this urgent global problem.*

Key Words: Plastic Treaty, Plastic Regulation, Regional Cooperation, SDGs, Soft Law, Policy, Governance, Waste Management

Introduction

Plastic has emerged as a grave marine pollution problem, with an estimated eight million tonnes of plastics being dumped into the oceans every year (UN Environment, 2018). This problem is multifaceted and complex, given the diverse sources and transboundary nature of plastic pollution. As such, addressing it requires multidimensional solutions that are both comprehensive and coordinated. An effective response to marine plastic pollution demands collective action by a range of stakeholders at the national, regional, and international levels. This coordinated effort must be holistic and encompass a variety of strategies that focus on the prevention, reduction, and clean-up of plastic waste. By working together, we can mitigate the damage caused by plastic pollution and safeguard the health of our oceans and the countless species that rely on them.

Despite increasing global recognition of the urgent need for a comprehensive, long-term, and multilateral approach to tackling marine plastic

pollution, no international agreement explicitly addresses this (Carlini & Kleine, 2018). While some existing international agreements indirectly address plastic pollution, they lack any binding commitments to effectively address this global challenge (Borrelle et al., 2017). Furthermore, the international legal framework is inadequate in addressing land-based plastic marine pollution, which highlights the importance of addressing marine plastic pollution comprehensively by changing the current legal and regulatory frameworks. To achieve this, it is crucial to address marine plastic pollution holistically, including at sea, within rivers, and on land, in order to prevent pollution from entering the oceans from various sources.

The international community's growing recognition that plastic pollution represents a significant global challenge and the inadequacy of the existing international legal framework to address it (Dauvergne, 2018) presents an opportunity to enhance plastic regulation on a global scale. Multiple approaches are under discussion to tackle marine

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plastic pollution (Raubenheimer & Mellgorn, 2018; Tessnow-von Wysocki & Le Billon, 2019; UN Environment, 2018; Simon et al., 2018). Scholars are highlighting the limitations of the current international legal regime and advocating for a new, comprehensive agreement that explicitly addresses marine plastic pollution (Kirk & Popattanachai, 2018; Hugo, 2018). The international community has agreed in principle to adopt a new agreement that legally obligates States to prevent and remediate plastic pollution. However, the negotiation process is complex, and ratification and implementation may be delayed if not all coastal states support the agreement (Chen, 2015). Thus, both amendments to existing international instruments and enhanced implementation at national, regional, and international levels are necessary to address the urgent challenge of marine plastic pollution.

Research Question

What legal and policy measures could be implemented to strengthen the international legal framework governing marine plastic pollution, considering its complex and multidimensional nature?

Aim and Objective

Given the complex and transboundary nature of marine plastic pollution and its diverse sources, this paper seeks to review the legal and policy measures that could be implemented to enhance the international legal framework governing marine plastic pollution. Specifically, the paper aims to identify and analyse various options for improved regulation of marine plastic pollution that could be considered in developing a new plastic treaty.

Importance of Implementing a Comprehensive Set of Measures to Regulate Marine Plastic Pollution

Currently, UNCLOS, MARPOL, and the London Convention are three key international legal instruments that address marine pollution, including plastic pollution. UNCLOS establishes the legal framework for preventing, reducing, and controlling marine pollution. MARPOL regulates the discharge of garbage from ships, including plastic waste, and the London Convention regulates the sea-based dumping of wastes and other materials, including plastic. While these international agreements provide a significant framework for addressing marine pollution, the global challenge of marine plastic pollution requires a more comprehensive approach. The existing international legal regime has limitations in effectively regulating

and preventing marine plastic pollution. Thus, there is a growing call from the international community for comprehensive measures to strengthen the international legal framework governing marine plastic pollution.

Several potential approaches can be adopted to address the problem of plastic pollution. One approach is strengthening existing legal instruments by expanding their scope, providing specific guidelines and targets, and increasing the enforcement mechanisms. Another possible solution is creating a new international agreement that specifically addresses marine plastic pollution (Kirk & Popattanachai, 2018). This new treaty could establish global targets for reducing plastic waste and establish new regulations for plastic production, use, and disposal. Additionally, funding mechanisms could be put in place to help developing countries improve their waste management infrastructure. However, addressing plastic pollution is not just the responsibility of governments and policymakers. Consumer behaviour, awareness, and industry linkages also play crucial roles in preventing marine litter (Manyara, 2023). Therefore, relevant stakeholders must work together to catalyse worldwide public awareness and behaviour change.

To tackle the problem of plastic pollution, governments can take various measures. They could mandate companies to disclose their plastic usage and pollution data, set targets for reducing their plastic footprint, and establish a global monitoring system to track corporate compliance with regulations. It is essential to cooperate between nations to address marine plastic pollution effectively. This requires an across-the-board effort by all key stakeholders, including governments, industries, community groups, and academia, to implement international marine environmental law (Osborn, 2015). Governments can set up a global task force or commission to facilitate information-sharing, coordinate clean-up efforts, and share best practices. To encourage public engagement, awareness campaigns could be launched, educational programs could be established, citizens could be incentivized to reduce plastic use, and local clean-up efforts could be supported. Taking such measures could help to mitigate the impact of plastic pollution and protect our marine ecosystems.

Potential Approaches for Enhancing the Legal Framework of Marine Plastic Regulation

This section presents an overview of potential options for addressing plastic pollution, particularly in the

context of the proposed plastic treaty. Given the complexity of this problem, it is divided into several sub-sections, each of which explores a different approach to tackling the problem. These include Potential Amendments to the Existing International Legal Regimes, Rivers-oriented Regional Regulations, Sustainable Development Agenda, Regional Seas Programme and Regional Cooperation, Soft Law Regimes, Policy, Governance, and Management Approaches, and New Legally Binding Agreements. Each of these sub-sections explores different approaches to tackling the problem of plastic pollution, providing a comprehensive overview of the options available to policymakers and stakeholders. By considering these various options, it is hoped that effective solutions can be found to address the critical issue of plastic pollution.

The first sub-section, amendments to the current legal framework, discusses potential changes to the existing international legal framework that directly or indirectly addresses plastic pollution. The following two sub-sections, namely, Regional Seas Programme, sustainable development agenda and regional cooperation focus on target-based and action-oriented measures to regulate marine plastic pollution, with a particular emphasis on how they could be integrated into the proposed plastic treaty. The sub-sections on soft law regime and Rivers-oriented regional regulations explain the importance of soft law agreements, regional cooperation, and rivers-oriented regulation. Finally, the proposed new global plastic treaty sub-section discusses the potential impact of a new plastic treaty on 'riverine' plastic regulation. It is worth noting that this paper does not advocate for any particular option over others. Instead, it presents the potential options, their strengths, and weaknesses, while taking into account the proposed global plastic treaty.

The Approach I: Potential Amendments to the Existing International Legal Regime

Marine plastic pollution has emerged as a significant environmental problem, attracting attention from around the globe. With this increased attention, discussions on how best to tackle this problem have expanded considerably. One of the options being explored is amending the existing legal regimes to include specific measures to address marine plastic pollution. However, simply amending the existing legal frameworks is insufficient, as the current international legal framework is fragmented and ineffective (WWF, 2019). Furthermore, the current legal instruments lack detailed provisions addressing the land-based and

riverine plastic pollution that enters the marine environment. Although some existing legal instruments partly address the problem, many sources of marine plastic pollution, particularly land-based and riverine sources, remain largely unregulated due to the limited scope of existing legal frameworks. For example, the Basel and Stockholm Conventions lack measurable targets and timelines for "ordinary" plastic waste, making progress monitoring difficult at the local and international levels (Raubenheimer & McIlgorm, 2018). Similarly, while UNCLOS, MARPOL, and the London Convention and Protocol seek to address sea-based sources of marine plastics, they present certain challenges in implementation and compliance (UN Environment, 2018).

Although the new plastic treaty is expected to play an essential role in addressing plastic pollution, it is important to emphasize that the effective implementation of the existing legal instruments is equally important. Enhancing the implementation of the current legal framework can lead to a faster reduction in global marine plastic pollution compared to waiting for the development and implementation of the new plastic treaty. Therefore, governments should prioritize the better enforcement of existing laws while concurrently negotiating a new plastic treaty to tackle this complex issue. A holistic approach that involves all relevant stakeholders, including governments, industries, community groups, and academia, is necessary to implement and enforce these laws effectively. Amending the existing international instruments and improving their implementation at both the national and international levels is essential to initiate a global reduction in marine plastic pollution.

Approach II: Rivers-oriented Regional Regulations

According to a study, 90% of ocean plastic comes from just ten rivers (Schmidt et al., 2017). Moreover, these rivers are transboundary, and plastic waste flows downstream from one country to another before reaching the ocean. This mismanaged plastic waste can be regulated before it enters the marine environment. Thus, a critical part of the solution to the problem of marine plastic pollution lies in exploring measures within rivers and their basins.

While the existence of plastic pollution in marine environments is widely recognized (Jambeck et al., 2015), the same level of awareness has not yet been achieved for plastic pollution in freshwater environments, particularly in rivers. Although there has been a significant amount of research on plastic pollution in marine environments in recent years, there

has been a notable lack of attention given to freshwater plastic pollution and its transportation dynamics in rivers (Blettler et al., 2018). This is problematic because plastic pollution in rivers is a crucial component of the larger problem of marine plastic pollution. As rivers transport plastic waste from inland sources to the ocean, addressing plastic pollution in freshwater environments is a vital step in tackling the issue of marine plastic pollution.

There is an urgent need to increase the quantity and quality of research studies on plastics in freshwater environments, which can lead to accurate estimates of plastic discharge from rivers to marine ecosystems. In addition, monitoring efforts should be accelerated in the world's most polluted rivers, particularly in Asia and the Pacific, where countries are undergoing rapid economic development and lack proper waste management systems. Mismanaged plastic waste accounts for a significant proportion of plastic pollution in these rivers, which could be regulated before entering the marine environment. Therefore, to effectively address the escalating problem of marine plastic pollution, it is crucial to focus on regulating pollution from rivers and revamp existing regulatory mechanisms.

The issue of marine plastic pollution in Asia and the Pacific requires regional cooperation to tackle the problem comprehensively. Research shows that five countries in the region are responsible for more than half of the plastic waste in the oceans, namely China, Indonesia, the Philippines, Vietnam, and Thailand (Jambeck et al., 2015). China, in particular, has a significant role to play, given its highly polluted rivers and its leading role in regional cooperation initiatives (Marsden, 2017). Therefore, China has a vital role in leading regional cooperation efforts to address marine plastic pollution.

Urgent and collective efforts are required to achieve comprehensive regional cooperation to tackle marine plastic pollution. China can become a significant player by leading regional cooperation in Asia and the Pacific. As a Dialogue Partner to any regional agreement or as a financier and developer, China can facilitate cooperation and partnership to tackle marine plastic pollution. However, regional cooperation also requires the active participation of other countries in the region, and the establishment of a coordinated approach to tackle marine plastic pollution.

In addition to leading the way in regional cooperation, there is also a need for China and other countries in the region to take specific actions to address the issue of marine plastic pollution. For

example, improving waste management systems and infrastructure, enhancing public awareness of the impacts of plastic pollution, and investing in research and development to identify effective solutions to tackle the problem. By doing so, countries in the region can reduce their contribution to marine plastic pollution and become more active participants in regional cooperation efforts.

Approach III: Sustainable Development Agenda

Plastic pollution has emerged as a major environmental challenge that threatens the health of our oceans and the species that inhabit them. Recognizing the gravity of the issue, the United Nations has established a comprehensive framework to address marine plastic pollution through its SDGs. The SDGs are 17 goals which aim to achieve a sustainable and equitable future for all by 2030. Several SDGs are particularly relevant to marine plastic pollution regulation, including SDG 12, which promotes responsible consumption and production practices that ensure the sustainable use of natural resources; SDG 13, which focuses on climate action and the need to mitigate and adapt to the impacts of climate change; and SDG 14, which aims to conserve and sustainably use the oceans, seas, and marine resources. In addition to these SDGs, the UN has launched several other initiatives aimed at reducing marine plastic pollution, including the Clean Seas campaign, which aims to mobilize governments, businesses, and individuals to take action to reduce marine plastic pollution. By focusing on these SDGs and initiatives, the international community can work together to address the global challenge of marine plastic pollution and ensure the sustainable use and conservation of our oceans and marine resources for future generations.

Regulating plastic pollution is an urgent global issue that requires a multifaceted approach. One approach is to reduce plastic production by promoting the use of alternative materials and encouraging manufacturers to adopt more environmentally friendly production processes. Another approach is to promote recycling, which can be achieved by educating the public on the importance of recycling and creating infrastructure that supports and facilitates the process. Additionally, the banning of single-use plastics can help to reduce plastic waste.

Governments, NGOs, and other stakeholders have a vital role to play in developing and implementing regulations that reduce plastic pollution

and protect the environment. The UN SDGs provide a useful framework for global commitments regarding marine plastic pollution reduction and prevention. For instance, SDG 13, "Take urgent action to combat climate change and its impacts," highlights the situation's urgency and underscores the need for immediate action (UNGA, 2015). Similarly, SDG 14, "Conserve and sustainably use the oceans, seas, and marine resources for sustainable development," emphasizes protecting marine ecosystems from plastic pollution, threatening marine life and ecosystems.

Governments, NGOs, and other stakeholders must collaborate to create and implement effective policies and regulations to achieve the SDGs. This includes developing strategies to reduce plastic production and consumption, promoting sustainable alternatives to plastic, and implementing robust recycling programmes. Moreover, educating the public on the impacts of plastic pollution and the importance of sustainable living can help to foster a culture of environmental responsibility and awareness.

SDG 14 promotes sustainable management and protection of marine and coastal ecosystems, particularly against land-based sources of pollution. SDG 14.1 specifically targets the reduction of marine pollution caused by land-based activities. The UN encourages nations to develop and implement national and regional strategies that enhance existing legal and institutional frameworks to achieve this goal. Regular reviews of progress made towards implementing the SDGs are also encouraged. The Oceans Conference, which focuses on SDG 14.1, aims to bring together international agencies, stakeholders, and sectors to build partnerships and promote financial opportunities, research, and innovative solutions. However, to effectively reduce marine plastic pollution, measurable targets must be set under SDG 14, as general provisions without quantification will not be sufficient (Dasgupta, 2020).

In conclusion, regulating plastic pollution requires a multifaceted approach that involves reducing plastic production, promoting recycling, and banning single-use plastics. The SDGs provide a useful framework for building on global commitments regarding marine plastic pollution reduction and prevention. Governments, NGOs, and other stakeholders must collaborate to develop and implement effective policies and regulations that protect the environment and promote sustainable development. We can create a more sustainable future and protect our planet for future generations through concerted efforts.

Approach IV: Regional Seas Programme and Regional Cooperation

Plastic pollution is an urgent environmental challenge that is affecting many regions globally. The Regional Seas Programme (RSP) can be crucial in tackling this problem. Launched in 1974 by the United Nations, the RSP is a novel approach to protecting marine and coastal environments. The programme aims to engage countries and regions with common seas and ocean-based resources by adopting comprehensive and specific action plans to promote a "shared seas" approach. Eighteen Regional Seas Conventions and Action Plans (RSCAPs) worldwide seek to promote regional cooperation to manage marine and coastal environments effectively. In general, RSCAPs require Action Plans to implement their programmes and often have a legally binding framework in the form of a regional convention and associated protocols. One critical issue addressed by the RSCAPs is land-based pollution. These programmes foster collaboration between countries in a specific region to share knowledge, resources, and best practices to address shared environmental challenges. By working together, countries can ensure the long-term health and sustainability of the oceans and coastal areas.

Plastic pollution poses a significant threat to our oceans, and RSPs can help mitigate this by promoting sustainable production and consumption practices. RSPs play a crucial role in addressing the issue of plastic pollution by implementing relevant and region-specific policies and regulations. For instance, the UNEP/MAP RSP for the Mediterranean has established a comprehensive legal framework known as the "Regional Plan on Marine Litter Management in the Mediterranean." This framework seeks to reduce marine litter, including plastic pollution, by introducing extended producer responsibility schemes and improving waste management practices. Similarly, the COBSEA RSP for the East Asian Seas has developed a Regional Action Plan (RAP) on Marine Litter that specifies measures to combat plastic pollution in the region. These measures include promoting biodegradable plastics, developing national action plans, and implementing public awareness campaigns. By adopting such initiatives, RSPs can help protect our oceans and preserve their delicate ecosystems for future generations.

Effective solutions to address plastic pollution in rivers require international cooperation because many rivers flow through multiple countries. Regional cooperation can play a crucial role in regulating riverine plastic pollution. One prominent example of such cooperation is the "Trash-Free Seas Alliance®," a

partnership among governments, NGOs, and businesses aimed at reducing marine debris. This alliance has been actively involved in improving waste management practices in countries along the Mekong River, one of the most heavily polluted rivers in the world. Another example is the joint strategies and action plans adopted by the Mekong River Commission (MRC). These agreements recognized the importance of regional cooperation to address plastic pollution and committed the member countries to work together to reduce plastic waste. Collaborative efforts can enable countries to share information and resources, coordinate monitoring and regulation of plastic pollution, and develop strategies to reduce plastic waste at its source. Moreover, joint initiatives can be undertaken to clean up rivers and protect marine ecosystems.

Effective plastic pollution management requires collaborative efforts between countries in a particular region, facilitated by RSPs that provide a framework for developing and implementing effective policies and regulations. By working together, countries can better protect their shared marine and coastal ecosystems and reduce the impact of plastic pollution on the environment. The RSP, under the auspices of the UN, has been instrumental in promoting regional cooperation to protect oceans from pollution. Additionally, the RSP and SDGs intersect to promote regional cooperation and advance the sustainable development agenda to tackle marine plastic pollution. For example, the RAP on Marine Litter of COBSEA aims to facilitate regional cooperation and implement the necessary environmental measures for the sustainable management of marine litter in their respective regions, supporting East-Asian countries to prevent and significantly reduce marine pollution, especially from land-based sources (SDG 14.1). Thus, transboundary cooperation through RSPs can play a crucial role in addressing riverine plastic pollution, representing an important step towards reducing plastic waste and protecting our planet's waterways, although it may not completely solve the problem.

Approach V: Soft Law Regimes

Soft law measures are essential to global efforts to combat marine plastic pollution. Such measures are not legally binding but can significantly shape the legal principles accepted as customary international and regional law. These principles can then be included in hard law instruments, which can commit parties to specific targets and timelines. In recent years, the development of soft law has become increasingly significant in addressing environmental protection

challenges (Boer et al., [1998](#)), including marine plastic pollution.

One example of a soft law measure is Agenda 21, which was developed during 1992 UNCED. This agenda promotes the integrated protection of marine environments and outlines precautionary measures to address marine plastic pollution. These measures include increased financial resources, the development of regional agreements and global policies, the management of land waste, the implementation of recycling programmes, the installation of sewerage treatment facilities, and the use of Environmental Impact Assessments (EIAs) to manage marine plastic pollution. Agenda 21 also highlights the need to prevent, reduce, and control ship-sourced pollution, significantly contributing to marine plastic pollution. Soft law measures such as Agenda 21 can influence the behaviour of governments, industries, and individuals and create the necessary political will to address marine plastic pollution effectively.

Marine debris, particularly plastic pollution, is a growing concern for the health of our oceans and coastal biodiversity. In response to this problem, numerous international organizations have taken action to address the issue. The COP CBD and GEF adopted a decision to address the issue of marine debris, particularly plastic pollution, and its effects on marine and coastal biodiversity (GEF, 2012).

Moreover, the NOAA/UNEP developed the Honolulu Strategy, an important planning tool to reduce and prevent plastic pollution and its impacts. The Honolulu Strategy focuses on various approaches, including market-based instruments for minimizing waste and strategies for preventing and managing marine pollution from land-based sources (Xanthos & Walker, [2017](#)). These approaches aim to reduce waste production and minimize the amount of plastic that enters our oceans.

In 2012, a voluntary commitment was introduced at Rio+20 to reduce marine debris significantly by 2025 (Borrelle et al., [2017](#)). This commitment highlights the importance of working together as a global community to tackle this issue. In 2017, UNEP also launched the Clean Seas campaign, which seeks to motivate stakeholders worldwide to take voluntary action to reduce plastic pollution. The campaign encourages individuals, governments, and businesses to commit to reducing plastic pollution and protecting the oceans and coastal biodiversity.

These initiatives and commitments demonstrate the global efforts to address the issue of marine debris, particularly plastic pollution, and its impacts on our

oceans and coastal biodiversity. With continued collaboration and commitment, it is possible to reduce and prevent the amount of plastic that enters our oceans and ensure the health and sustainability of our oceans and marine life.

Moreover, soft law measures can act as an early warning system, alerting the global community to emerging environmental issues and helping to catalyze the development of new legal frameworks to address them. In this way, soft law can play a crucial role in promoting the sustainable use of our oceans and protecting marine ecosystems from the devastating impacts of plastic pollution.

Overall, using soft law measures is an important strategy for addressing the complex environmental challenges associated with marine plastic pollution. By developing soft law, we can create a framework for more robust legal protections that can effectively mitigate the harm caused by plastic pollution and promote the sustainable use of our oceans for generations to come.

Approach VI: Policy, Governance, and Management Approaches

Effective management and governance strategies are vital in addressing the growing problem of marine and riverine plastic pollution. However, managing plastic waste requires a comprehensive and multifaceted approach encompassing reducing plastic use, improving recycling systems, and ensuring proper disposal. To achieve this, developing and improving recycling infrastructure, providing education and outreach to communities, and implementing effective waste management practices, especially in middle-income countries where waste management systems may be inadequate (Kandziora, 2019). Governments can play a pivotal role in regulating plastic product use and disposal by creating policies that include bans on single-use plastics, taxes on plastic bags, and regulations on the disposal of plastic waste. By adopting a holistic approach and implementing effective policies and practices, we can curb the alarming increase in plastic pollution and preserve our marine and riverine ecosystems for generations to come.

The global implementation of extended producer responsibility is critical for rebalancing the Circular Economy, both in developing and developed nations (Liu, 2018). This approach not only promotes the development of environmentally friendly alternatives to plastic products but also encourages the private sector to take responsibility for their products'

pollution footprint. To achieve this, we need a fundamental shift away from the current systems prioritizing profit maximization over the environment. Effective governance is key to enforcing policies, including creating regulatory bodies with technical, financial, and authoritative resources to oversee policy implementation. Additionally, it's essential to work collaboratively with international organizations to establish global standards and agreements on plastic pollution, facilitating a more sustainable future for all.

The issue of plastic pollution has global implications, yet only a few policies and strategies currently address this challenge comprehensively (Borrelle et al., 2017). To develop effective governance arrangements, it is essential to base them on sound scientific data and research. In addition to scientific expertise, indigenous knowledge of plastic pollution dynamics can guide policymakers in designing appropriate responses to regulate marine plastic pollution. However, policymakers and key stakeholders must have a clear understanding of how this knowledge can be utilized and incorporated into policy design to achieve effective outcomes. It is also crucial to tailor these approaches to the specific challenges and contexts of different regions and communities for them to be effective. Collaborating and engaging with key stakeholders, including industry, civil society, and local communities, can facilitate the development of sustainable approaches to address this global challenge.

Approach VII: A New Legally Binding Agreement

Marine plastic pollution is a complex issue that demands a coordinated and comprehensive global approach and shared responsibility. One potential solution to combat this problem involves the implementation of new legal instruments that specifically address marine plastic pollution. To effectively reduce and ultimately eliminate plastic discharge into the marine environment, a new legally binding arrangement that supports quantifiable national reduction targets, adequate monitoring, technological advancements, and review systems is crucial. Unfortunately, there are currently no international treaties dedicated to tackling the issue of marine plastic pollution. The existing legal frameworks pertaining to marine plastic pollution are fragmented and not adequately equipped to facilitate a robust international response to this pressing issue (WWF, 2019).

The current international legal framework fails to provide comprehensive guidelines to prevent plastic

pollution from land-based sources entering marine environments. Additionally, it lacks concrete targets and timelines that impede effective progress monitoring at national, regional, and global levels (Raubenheimer & McIlgorm, 2018). Although UNCLOS, MARPOL, and the London Convention and Protocol are designed to address sea-based marine plastic sources, their effectiveness is limited by challenges in implementation and compliance. Therefore, there is a need for more robust and actionable international agreements to tackle the issue of plastic pollution and protect marine ecosystems. Such agreements should prioritize prevention, establish measurable targets, and incorporate mechanisms to ensure compliance at all levels.

An overarching global response to marine plastic pollution requires negotiating and implementing a new legally binding international agreement. Such an agreement should initiate joint global efforts to manage the marine plastic pollution crisis by setting each state's responsibilities and ensuring the states' accountability for the ocean's plastic disposal every year (WWF, 2019). The international climate change community has decades of experience developing, negotiating, and implementing global agreements to limit carbon emissions and other pollutants. This vast experience and the recent international climate change policy progress can provide a blueprint for international law, policy, and governance on plastic pollution. From a policy perspective, the international legal and policy instruments on plastic pollution are where climate change agreements were in 1992 when UNFCCC formally identified climate change as a global issue and sought support from all the countries to address it. By this time, marine plastic pollution would have increased substantially. Therefore, the scale and pace of solutions must correspond to the scale and pace of emissions (Jambeck et al., 2015). Following the same pace, an international agreement on marine plastic pollution may not exist soon. It is time for the international community to come together and take

decisive action to address this pressing issue, following the example set by previous successful international agreements on climate change and other environmental challenges.

Marine plastic pollution is a global problem that requires a comprehensive, coordinated response internationally. The current lack of a legally binding agreement poses a significant challenge to effectively addressing this crisis. To this end, it is crucial to negotiate and implement an international agreement that establishes joint global efforts to manage marine plastic pollution. Such an agreement must set clear responsibilities for each state and ensure their accountability for the disposal of plastic in the oceans annually (WWF, 2019).

Conclusion

Marine plastic pollution is an urgent global issue that demands immediate action from all nations. While existing international agreements such as UNCLOS, MARPOL, and the Basel and Stockholm Conventions provide a foundation for addressing marine plastic pollution, they must be strengthened and enforced to achieve their intended goals. Developing a new international agreement with binding targets and timelines for reducing marine plastic pollution can provide a comprehensive approach to addressing this issue. Regional agreements and economic instruments such as taxes and fees on plastic production or use can complement global efforts. Public awareness and education campaigns are crucial for reducing plastic waste, and scientific research and innovation can offer new technologies and solutions for preventing and cleaning up marine plastic pollution. However, effective action on marine plastic pollution requires a multi-faceted approach involving international cooperation, strong legal frameworks, and the active participation of individuals, businesses, and governments. By working together, we can tackle this global challenge and protect our oceans for future generations.

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