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Ocean Nexus  
Equity & Marine  
Plastic Pollution  
Report 2022

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# Towards an Equitable Approach to Marine Plastic Pollution

Dr. Jessica Vandenberg and Dr. Yoshitaka Ota



## **Marine plastic pollution (MPP) is an equity issue.**

An estimated eight million tons of plastics end up in the ocean each year, negatively impacting the environment and society. However, the burden of these impacts are often disproportionately experienced by communities who are marginalized and most vulnerable to the impacts of plastic pollution. Moreover, policies and management actions intended to mitigate plastic pollution have in some cases exacerbated existing inequities, or even created new domains of hegemonic interest, such as the global plastic waste trade or the growing privatization of plastic waste governance. Despite increased acknowledgement that MPP is an equity issue, there is limited research on the topic.

Through thematic research and case studies that explore diverse issues of MPP, this report contributes to understanding the ways in which inequitable plastic pollution burdens are embedded within every facet of plastics, from its creation to disposal across all corners of the world.



I strongly believe that the future of the ocean is the very future of humanity. The Nippon Foundation has been tackling ocean related challenges for over four decades. Guided by our founding philosophy of “One World One Family”, our initiatives have transcended politics, ideology, religion, race, and national borders to ensure that healthy oceans are passed on to the next generation, a thousand years into the future.

Mankind has placed heavy burdens on the environment. One of these has been marine waste, and in particular, marine plastic pollution. While the invention of plastics has made our lives more convenient, its mass production and mass consumption has led to a global concern. I have traveled to more than 120 countries to date, and have seen with my own eyes, many countries facing serious problems from the plastic waste leaking into the ocean.

The ocean is a common asset of mankind. It is inextricably interconnected with human life and culture. The ocean not only regulates the Earth’s climate and produces oxygen essential for our existence but also provides humanity with food, resources, and labor. It is our duty to protect and keep the ocean healthy for the next generation.

This report was compiled by a team of multidisciplinary scholars worldwide who see marine plastic pollution as an ocean equity issue. Plastic has no place in the future of our ocean. I believe that this report will give us the impetus to take a major step towards achieving an equitable approach to tackling the problem of marine plastic pollution in our ocean.

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Led by Dr. Yoshitaka Ota, this report is directed, coordinated, and implemented by the Nippon Foundation Ocean Nexus Center.

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This work would not have been possible without the coordination team, who did much of the heavy lifting and organization for this report.

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# Introduction



## Introduction

### Why is Marine Plastic Pollution an Equity Issue?

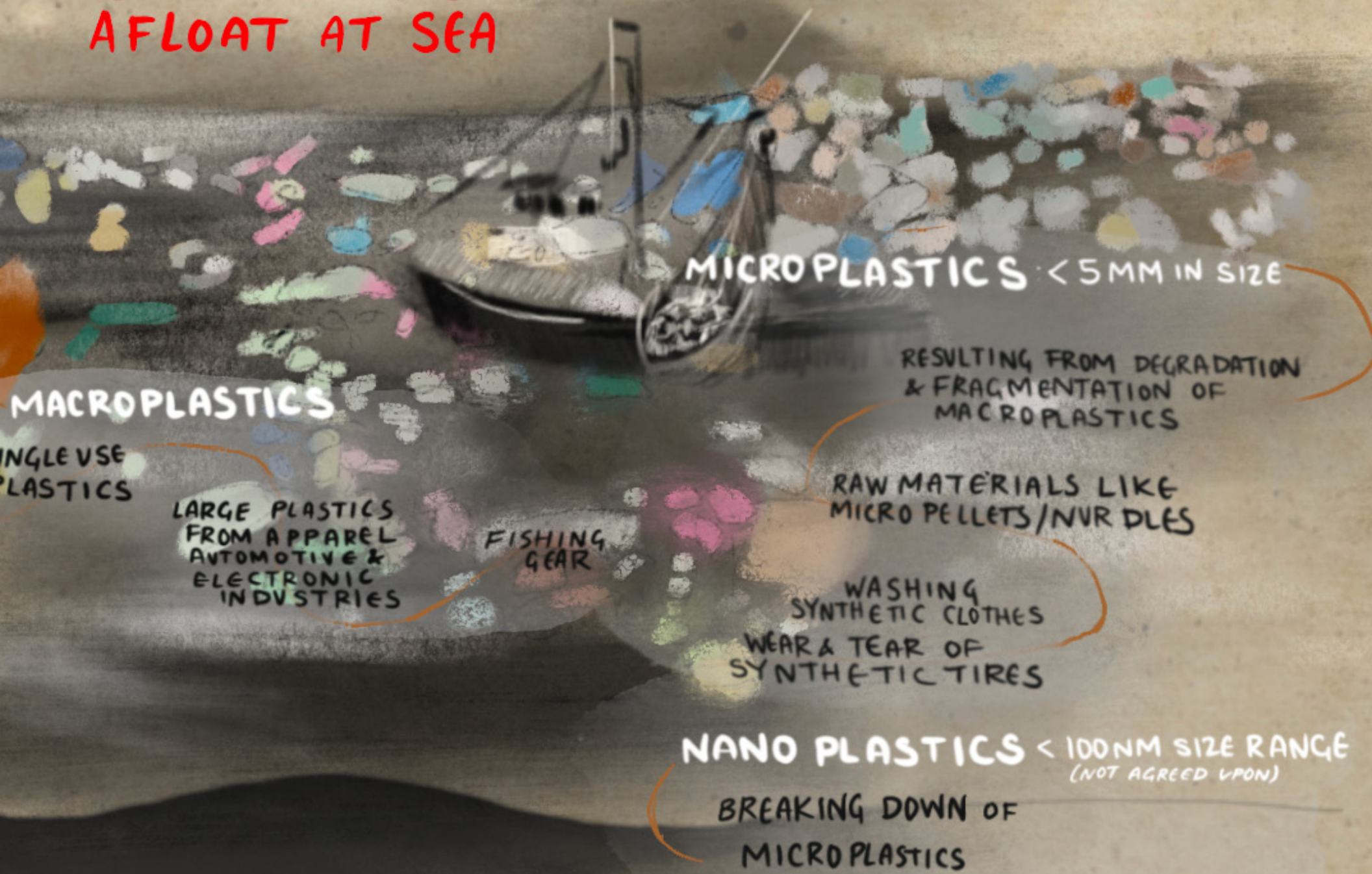
Marine plastic pollution (MPP) is a growing global concern, producing a range of negative impacts on the environment and society. Nearly 14 million tons of plastics end up in the ocean each year, making up approximately 85% of marine debris (IUCN, 2021; UNEP, 2021). Micro- and nanoplastics, along with the chemical additives used in plastic products, travel up global food chains impacting the health of humans and non-human organisms, as well as the environment in which they live (Liboiron 2016; Meeker et al. 2009). MPP leads to injury and death of aquatic organisms through ingestion and entanglement (Laist, 1997; Kühn et al., 2015). Moreover MPP is a critical threat to human food security and economies globally. Finally, the production of plastics is a growing contributor to the climate change crisis (IUCN, 2021).

The damage that marine plastic pollution leaves behind is manifold, encompassing a diversity of ecological, social, and economic impacts. However, the burden of these impacts are often inequitably experienced by communities who are marginalized and most vulnerable to the impacts of plastic pollution. Moreover, policies and management actions intended to mitigate plastic pollution have in some cases exacerbated existing inequities, or even created new domains of hegemonic interest, such as the global plastic waste trade or the growing privatization of plastic waste governance. Marine plastic pollution is thus complex and influenced by a multitude of political, economic, and social systems that need to be considered in order to equitably and effectively address the problem.

~ 85% OF  
GLOBAL MARINE  
LITTER IS PLASTIC



# 5 TRILLION PLASTIC DEBRIS AFLOAT AT SEA



## The Social Equity Gap

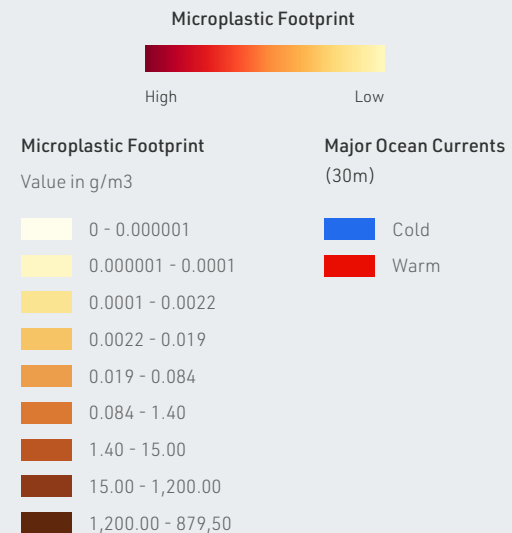
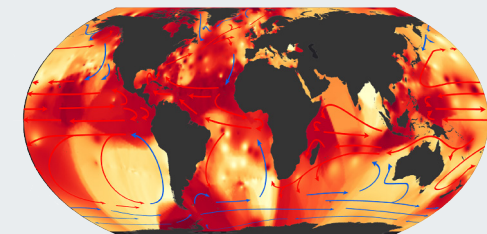
Although social equity sits square in the middle of marine plastic pollution and its governance, equity issues are rarely drawn into the larger conversations on MPP nor are they widely studied. On the other hand, impacts to marine life have been extensively studied; this facet of MPP is often used to demonstrate the urgency of the problem to the general public. Imagery of marine mammals entangled or ingesting plastics are familiar sights in MPP campaigns. In scientific literature, such impacts were recorded as early as the late 1960s in Laysan albatrosses, fur seals, and marine turtles. From the early 2000s, studies showed microplastics as an emerging, inconspicuous threat to marine biological processes through bioaccumulation and biomagnification (Agamuthu et al., 2019; Botterell et al., 2019; Alava et al., 2020; Mahara et al., 2022; Miller et al., 2020).

Least studied in the fields of MPP are impacts on humans. Human health-related microplastics research has focused on the risks associated with the consumption of toxic compounds found in plastics (Cho et al., 2019; Rochman et al., 2015). However, much is still not known about the human health impacts of microplastics or the even smaller nanoplastics (Koelmans et al., 2015). Even less is known about the impacts of MPP on other human dimensions, such as well-being, and the equity implications of this global crisis.

### Box 1. Microplastics Pollution Footprint Map

By Juan Jose Alava

Although MPP is everywhere, it persists at varying densities, further complicating the disproportionate burden of ocean plastics. This figure illustrates how marine microplastic density varies across global oceans, demonstrating how the risk of exposure to plastic pollution is higher for some communities than others (Ocean Pollution Research Unit [OPRU], 2022; <https://oceanpollution.oceans.ubc.ca/research/microplastics-pollution-footprint/> [oceanpollution.oceans.ubc.ca]).



## Defining Equity in Marine Plastic Pollution

There is no universally agreed upon definition of equity (Campbell and Hanich, 2015), but in this report equity refers to fair or just treatment among individuals or groups (Law et al. 2018). The environmental management literature increasingly recognizes equity as a multidimensional concept that includes distributional, procedural, recognition, and contextual dimensions (Friedman et al. 2018; Law et al. 2018; Pascual et al. 2014, McDermott et al. 2013).

For the purpose of this report, we apply these four dimensions as a framework to evaluate social equity within the context of marine plastic pollution (Table 1). This framework, however, is not exhaustive. As demonstrated in the subsequent case studies, we illustrate that solving MPP is complicated by a multitude of political, economic, social, historical, and ecological factors. These interdisciplinary attributes require us to transcend the categorical ways of evaluating inequities, think through problems holistically, and be open to other ways of knowing and experiencing the impacts of MPP.

Table 1. **Definitions of the Four Dimensions of Equity** (Friedman et al. 2018; McDermott et al. 2013).

Dimension	Definition	Marine Plastic Pollution
Distribution	Distribution of costs, benefits, rights, responsibilities across all stakeholder groups	Distributional inequities emerge as uneven MPP burdens that disproportionately end up in often poor and marginalized communities.
Procedure	Involvement and inclusion of all stakeholder groups in decision-making processes	Procedural inequities emerge as the power asymmetries within MPP decision-making processes where powerful industry groups have enormous influence while those most impacted by the harms of MPP are often left out of the decision-making process.
Recognition	Acknowledgement and respect for knowledge systems, values, social norms, and rights of all stakeholders in policy or program development and implementation	Recognition inequities emerge when certain knowledge systems and values (often those from a Global North context) are prioritized in MPP management approaches over others (often those from a Global South context).
Context (System)	Consideration of the social, governance, economic, historical and cultural contexts, that influence an actor's ability to gain recognition, participate in decision making, and lobby for fair distribution	Contextual/systemic inequities emerge through the ongoing colonial relations embedded in dominant MPP and plastic waste governance that perpetuates the exploitation of indigenous land and bodies.

## Breakdown of the Report

In this report, we aim to address the various ways in which social equity is entangled with the impacts of MPP and its governance and management. Through case studies that explore the contours of equity and MPP across different geographic, political, cultural and economic contexts, we demonstrate the complexities of MPP and how the lack of acknowledgment of these complexities has led to inequitable plastic pollution burdens. The research that contributed to this report is multidisciplinary, spanning facets of the issue across corporate governance, human health and well-being, policy and law, and field-based studies assessing local perspectives on MPP and its governance.

Major findings from case studies were used to build themes of emerging inequities related to MPP: Responsibility, Knowledge, Well-Being, and Coordination. Across each thematic section we highlight major equity recognitions identified as processes that drive ongoing inequities related to marine plastic pollution.

**Responsibility:** We describe how industry has become an influential actor in plastic waste governance, which has impacted how governance actions are determined and who is deemed responsible for addressing the problem of MPP.

**Knowledge:** We examine how industry has shaped mainstream discourses and knowledge systems that have driven the focus on end-of-life approaches and framing the problem of plastics as an issue of waste. We also discuss how non-western values and knowledge systems are excluded from the discourses and narratives that guide plastic waste governance and how this neglect leads to inequitable and colonial governance outcomes.

**Well-Being:** We explore the multitude of impacts experienced by communities who are most burdened by marine plastic pollution to highlight the diversity of perceived impacts and the importance of understanding impacts at the community level.

**Coordination:** We discuss how fragmented and uncoordinated policies can lead to ongoing forms of waste colonialism and exploitation.

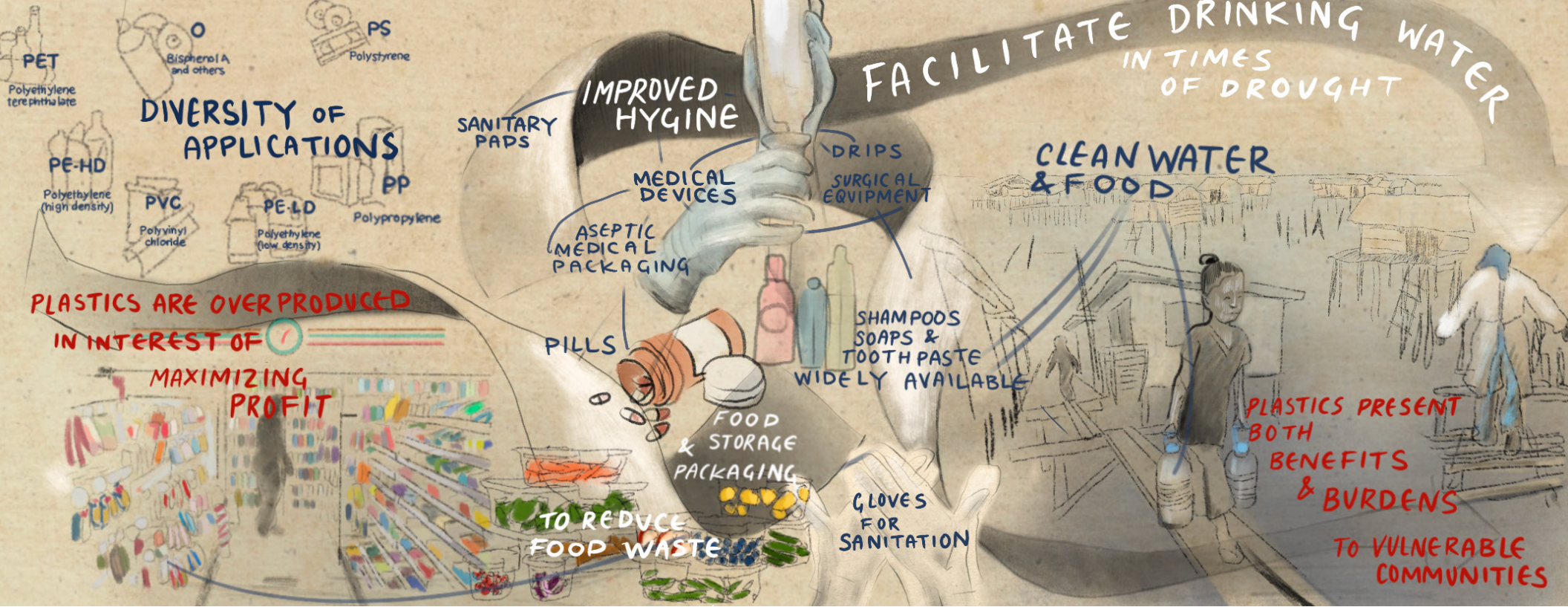
Through this report, we present a diversity of issues related to MPP that demonstrate how equity should be a central factor in future research and policy decisions. These considerations are essential to solving the global crisis of marine plastic pollution.



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# Background





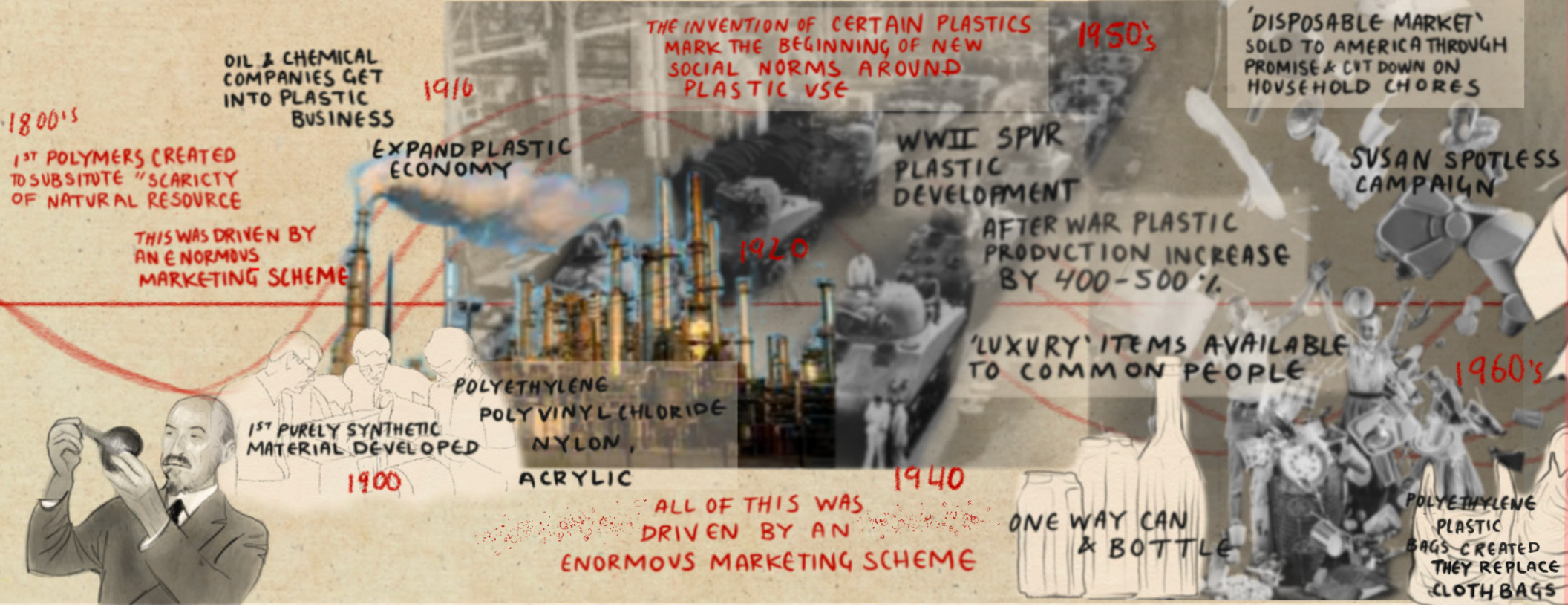
## Building Norms and Values Around Plastics

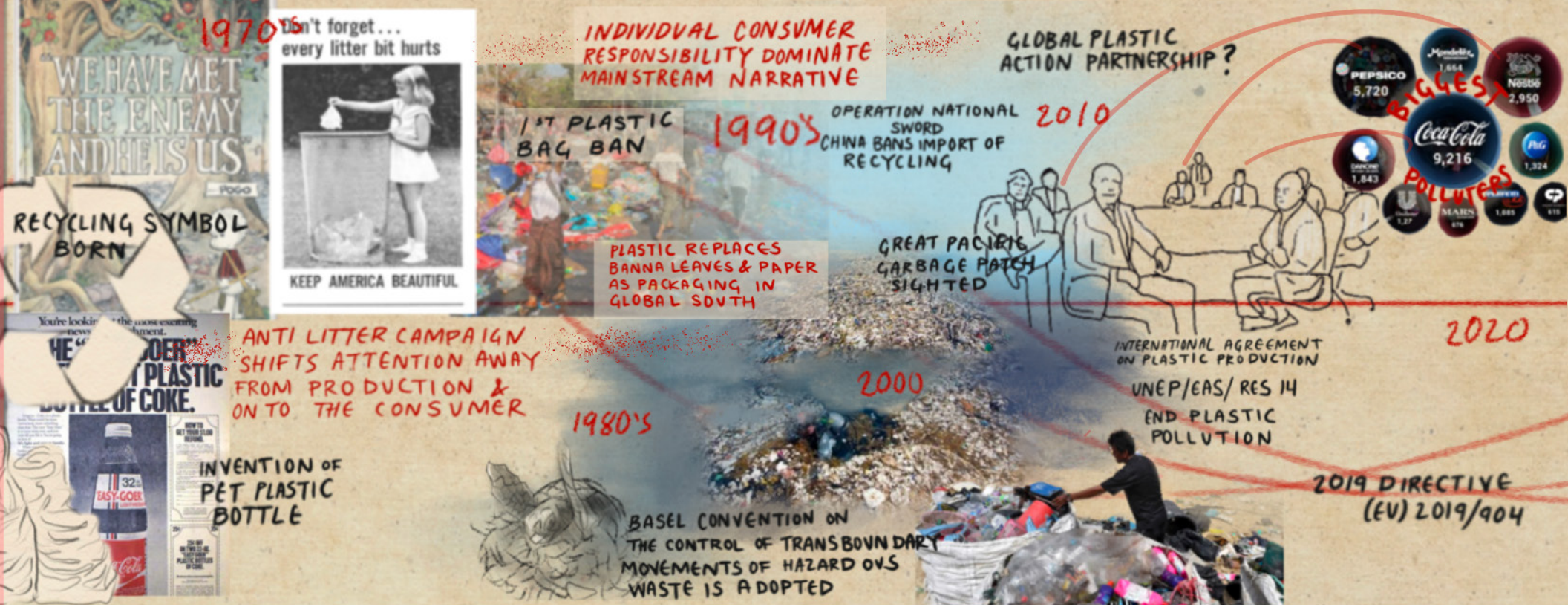
The invention of plastic can be credited with significant benefits for society. Plastics are used to provide tools to protect, preserve, and address human health concerns. The inexpensive and durable nature of plastic has facilitated economic opportunities through reducing the production cost of reusable products, packaging, and transportation goods. However, this progress has been possible because the costs of plastics are not equitably shared.

While the role of plastics in protecting health and well-being is indisputable, our awareness of the associated costs has been slow to catch up with the pace of plastics production and use. The impacts of excess plastic use and inadequate waste management practices have created inequitable outcomes for communities around the world who are left disproportionately burdened with plastic waste. Moreover, the benefits

provided by plastics in some cases obscure existing inequities by offering short-term unsustainable solutions to broader systemic problems, such as uneven access to utilities and other municipal services (See Njeru, 2006; Morinville, 2017).

In many cases, plastics are not used out of necessity, but rather out of convenience and in the interest of maximizing profits. This culture of convenience and the use of wasteful single-use plastics was not adopted overnight. It was normalized through countless marketing campaigns by plastic producers and consumer good brands over decades that continue to shape mainstream narratives around plastic use and plastic waste globally.





### How Did We Get Here?

To understand the problem of MPP—and evaluate how we may achieve effective solutions—we need to understand how plastics have become ever present in our societies.

How did plastics become the defining material of the Anthropocene? How did we come to value and depend on plastics? We need to situate the problem of MPP among the complexities of its contemporary and historical patterns of production, use, and disposal. Gaining this broader understanding brings to light the issues of social equity that are entangled with plastics and may also provide insights on how we may identify solutions that are effective and socially equitable.

**Box 2. COVID-19 Pandemics' Influence on Plastics**

By Holly Amos

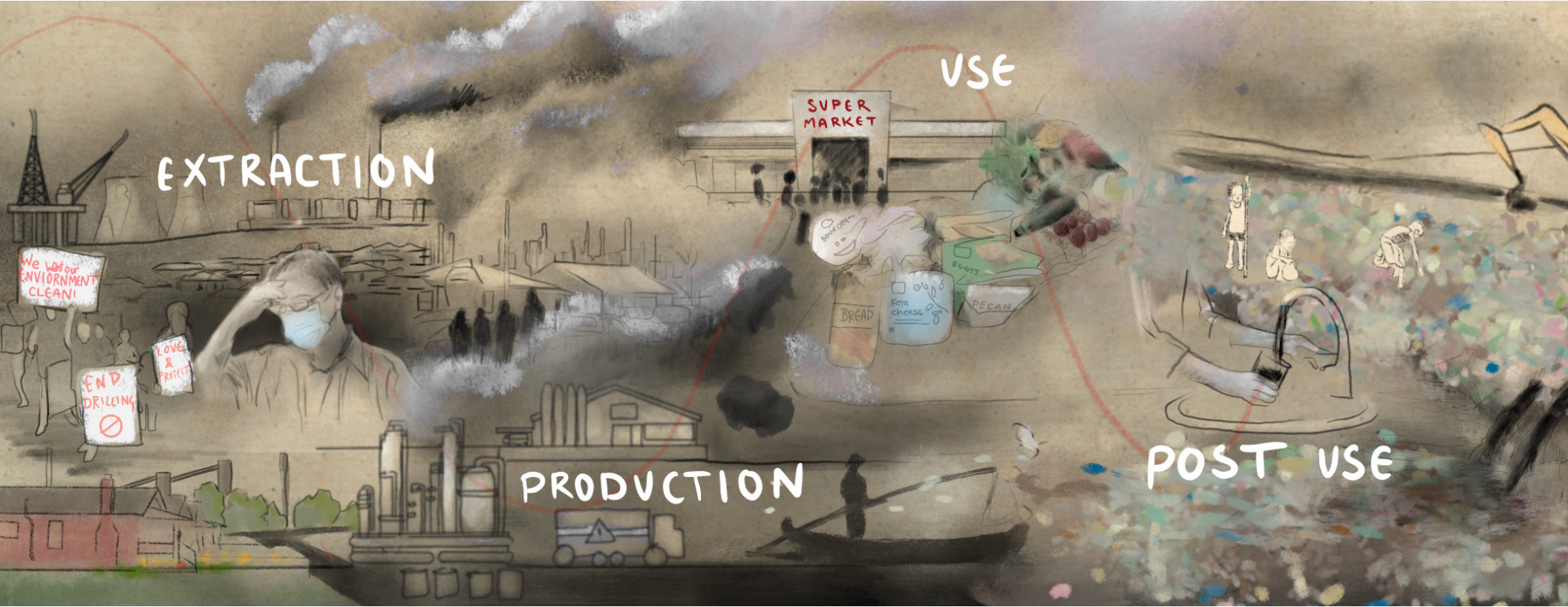
The COVID-19 pandemic emerged in 2019 and spread around the world throughout 2020, dramatically impacting our social, economic, and political systems. Reduced industrial activities and movement resulted in a dramatic reduction in air and water pollution in some densely populated areas (Venice, Beijing, etc.). However, the environmental impact of the pandemic was not wholly positive. The pandemic shifted our relationship with disposable plastic items, impacting progress on efforts to reduce, regulate, and address plastic waste.

Attempts to contain and treat COVID-19 have resulted in an increased demand for plastic products, including single-use and disposable goods. The use of personal protective equipment (PPE) was a key public health tool throughout the pandemic. UNICEF estimated PPE needs through the end of 2020 to be 2.2 billion medical masks, 1.1 billion gloves, 13 million goggles, and 8.8 million face shields (UNICEF, 2020). These estimates do not include the gowns, nonmedical masks, booties, and other products that were also used around the world. Additionally, the demand for single-use plastic packaging rose during the pandemic as attempts to prevent disease transmission through indirect contact—such as handling reusable mugs or bags—increased demand for disposable goods (ABD, 2020 in Parashar & Hait, 2021). In some cases, progress on single-use plastic reduction policies was stalled or reversed as policies were rolled back in the face of pandemic uncertainty and industry seized this advantage (Silva et al., 2020).

The plastics industry has been reported to have attempted to capitalize on the pandemic to reframe the discussion around plastics and steer away from the pre-pandemic efforts to address plastic production and pollution (Mah, 2021). Further, reduced oil prices incentivized manufacturers to take advantage of producing virgin plastic at a lower cost relative to the expense of recycling activities (Mehran et al., 2021), seizing the opportunity to meet the increased demand with newly produced plastic products that will persist in the environment unless managed correctly.

As a consequence of the increased demand for plastic products, plastic waste generation climbed (Jribi et al., 2020; WEF, 2020; WHO-UNICEF, 2020), while global plastic recycling fell (Parashar & Hait, 2021). The mismanagement of pandemic-related wastes has been called out for causing “widespread environmental contamination” (Prata, 2020), as plastics used in PPE persists in the environment if not properly managed (Mehran et al., 2021). Once littered, plastics in the environment are exposed to forces such as UV radiation, wind, and sunlight that break the plastics into smaller pieces, allowing these newly formed micro- and nanoplastics to enter and circulate in our environment (Patricio Silva et al., 2020; Parashar & Hait, 2021). Some have even referred to the pollution as a “global plastic waste management crisis” (Mehran et al., 2021).

The COVID-19 pandemic has had significant economic implications along the supply chain, including the impacts of reduced or shifted consumption and disposal patterns. The global recycling economy was impeded throughout the pandemic, disadvantaging the informal sector workers who rely on collecting recyclables for income and may not have access to appropriate PPE, which increased the COVID-19 exposure risk associated with these activities (Circulate Capital, 2020). Coming out of the pandemic, we are also facing a reordering of economic priorities. The economic consequences of the pandemic will likely roll on for a significant period of time. Individuals have faced increased expenses and loss of income, while businesses have seen revenue and expense shifts, supply chain disruptions, and varying levels of governmental support. These economic hardships may result in a shift of priorities away from plastics-related and environmental concerns (Urbina et al., 2020).



## Plastics Have Equity Implications Across All Lifecycle Stages

Inequitable impacts of plastic pollution can be observed at all stages of the plastic lifecycle. Impacts extend across social, political, and economic effects that disproportionately affect people of color and low income communities. While critical research on the social impacts of marine plastic is still relatively new, it highlights that bringing equity into marine litter research requires considerations of inequities at the extraction, production, exportation, and disposal stages of plastics.

Extraction practices displace and exploit communities and damage their natural environment. Producing plastics causes harm to the people who live near the plastic production facilities and the surrounding ecosystems. The use of plastic, while necessary and beneficial for some, is a matter of convenience and luxury for others. Post-use disposal and recycling is out-of-sight and out-of-mind for some, while others are forced to live, work, and play in between piled up trash and floating plastic debris.

In this report, we acknowledge that plastic pollution and its inequities do not start in the ocean. It is a problem that exists across all life cycle stages, from extraction to disposal. This report, however, centers MPP to call attention to the limited focus on equity in that field. The following case studies provide further information about the contexts in which inequities emerge. By demonstrating the diversity and complexity of the issue, we aim to highlight how critical it is to further emphasize equity in research and policy moving forward.

## 01

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# Responsibility

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## Responsibility

### Why Responsibility?

One of the critical questions we must ask when thinking about where governance actions should lie is, “Who is responsible for addressing the plastics crisis?” The plastics crisis is framed as an environmental problem fueled by failing waste management systems, low recycling rates, and high levels of waste leakage. However, this framing places responsibilities upon consumers and waste managers, while the role of the plastics industry and the production of plastics is left largely ignored. This asymmetrical framing has been criticized as one that focuses on symptoms rather than the root cause of the plastics crisis—the overproduction of toxic and wasteful plastics (Mah, 2021; Farrelly et al., 2021; Tangpuori, 2021). In this section, we discuss how industry became an influential actor in plastic waste governance and how this influence has impacted governance actions and who is deemed responsible for addressing the problem.

#### Box 3. **Technocratic Language of the Circular Economy Ignores Uneven Burdens of Recycling**

Across academic, governance, and industry circles, a global circular economy is presented as the necessary response to addressing the plastics crisis. Under this model, plastics are managed within a closed loop system through the reduction, recycling, and reuse of plastic materials. The mitigative approaches under the circular economy, however, neglects the potential environmental justice consequences that stem from the recycling technologies that are critical to achieving a closed loop (O’Neil, 2019). Chemical recycling creates uneven toxic burdens across the globe: plastics that require more hazardous recycling processes are situated in poorer places, whereas safer practices occur in wealthier ones. This inequitable reality is rarely acknowledged. Like many other technological solutionist approaches, the circular economy is typically framed as apolitical, and the toxic risks are discursively disguised as current “technological hurdles” that can be solved through technological advancements (Mah, 2021).



## The Power of Big Business on Global Plastics Governance

Big businesses from the petrochemical and the fast-moving consumer good sectors have become increasingly active in the governance and management of plastic waste. In turn, this has influenced mainstream narratives of the plastics crisis and of waste governance decisions globally. The involvement of these businesses is strategic, as they have a lot at stake: if the production of plastics were restricted these industries would suffer, with far-reaching impacts. Plastics currently account for 80% of petrochemical markets (Cetinkaya et al. 2018) and are projected to be the main driver of fossil fuel industries over the coming decades.

The plastics industry on a whole has not willingly taken responsibility for advancing plastic waste governance approaches. However, some industry actors are actively aware that taking responsibility does not necessarily require following orders dictated by states and society, but instead provides an opportunity for them to gain political power in defining problems and the solutions to address them. These industry actors therefore push voluntary, self-regulated approaches that allow them to have control over mitigative actions and indicators of successes. Their priority is to not limit ongoing economic growth. Most of these activities can be broadly defined as corporate social responsibility (Rajak & Dolan, 2016). These actions dominantly focus on “end of life” solutions, such as funding marine litter cleanup initiatives or establishing plastic recycling coalitions, while actions to reduce plastic production are minimal. Recently, the plastics industry’s involvement in governance has extended to waste management through public-private partnerships with national governments and direct involvement in the drafting of national legislative action plans. These forms of corporate involvement are something to consider, given the plastics industries are among the world’s most powerful institutions and their central interest in economic growth is reliant on the use of plastics (Barrowclough and Birkbeck, 2020).

National political parties have become indebted to big business owners and CEO's in exchange for financial support of political campaigns (Dauvergne, 2018). Moreover, governments globally have been happy to delegate environmental governance responsibilities to the private sector, as public-private partnerships are seen as more efficient and cost-effective (Gale and Haward, 2011, Gunningham and Grabosky, 1998). International environmental NGOs have also grown dependent upon funding, branded sponsorships, and cause-marketing to finance and promote campaigns (Corson, 2010; Enns et al. 2021; Beer, 2022). These institutional entanglements have resulted in environmental discourses and global environmental governance agendas that reflect the priorities of powerful industry actors rather than the transformations necessary to address environmental problems.

## Inequity Within Responsibility

### Displacing Responsibility Onto 'End-of-Life' Actors

Plastics and their waste are mostly governed through end-of-life approaches. Governance efforts target more efficient waste management, recycling, and marine debris capture systems. This focus on plastic waste, rather than plastic production, has been criticized as overemphasizing the symptoms of the problem while ignoring the root cause. **This focus is strategic, serving as a distraction from the continuing efforts of big business to avoid responsibilities or derail regulatory actions across other life cycle stages.**

Currently, plastic production is limitedly governed through indirect policies aimed at reducing plastics use and recycling to reduce dependence on virgin plastic production. Manufacturing certain plastics has been regulated in some countries—such as the manufacturing of plastic bags and microbeads for toiletries—though most efforts in manufacturing are implemented (or pledged) on a voluntary-basis to meet corporate sustainability agendas (Barrowclough and Birkbeck, 2020). Many of these pledges to reduce plastic use in product manufacturing are frequently abandoned, highlighting the ineffectiveness of voluntary approaches. Plastics use is often governed through consumer education, putting the onus of appropriate disposal on individuals. It has also been regulated through plastic bans, taxes, levies, and recycling depositories. Plastic bans are more commonly implemented in Global South nations, while taxes and levies are more common in the Global North due to the influence of corporate lobbying against bans (Clapp, 2012).

Symptom-focused solutions not only distract attention away from addressing the root cause of the problem, they also displace action onto those who have limited capacity to produce transformational change. For example, marine debris practitioners may perceive their work to be effective within the immediate scope of debris removal; however they also recognize that their impact is limited and that the lack of actions geared towards regulating manufacturing and producing plastics will negate any progress made in cleanup efforts.

## Case Study

# Understanding Measurements and Perceptions of Success Within the Washington State Marine Debris Action Plan

By Blair Kaufer

**Background:** Like other parts of the world, Washington State is not immune to marine debris. To better understanding the issues of and solutions for marine debris in Washington State, this case study focuses on the experiences and perspectives of those who contribute to the Washington State Marine Debris Action Plan (WA MDAP), which functions as a collaborative partnership under the NOAA Marine Debris Program (NOAA, 2021). Specifically, for this case study the author conducted 6 expert interviews and 14 surveys with marine debris practitioners who have worked toward the goals, strategies, and actions within the WA MDAP.

**Challenge:** Clarifying these perceptions and ways in which metrics are captured can help us better understand the impact that local communities can make on their immediate environment. Working through these perceptions can also help illuminate the complications that practitioners in this field experience as they take on this global issue.

**Findings:** 60% of survey participants focus their efforts on removal projects. However, participants wish to see more effort and attention turn towards prevention efforts.

All survey respondents agree that data collection on marine debris metrics is an important element to their project. Respondents also agree that their measurements and data capture the impact they make on marine debris in Washington State, demonstrating high face validity in the metrics used to record outputs and outcomes. Survey respondents feel that their projects aligned with their organization's mission and values and that they have experienced success in meeting their outlined goals. The primary metric used among this group of practitioners is weight of debris removed

(more than 70% of survey respondents), followed by volunteer hours and total number of cleanups. While many focus their efforts on removal projects, participants understand that marine debris removal effort will never fully address the root problem of why marine debris exists in the first place.

Overall, WA MDAP participants believe that their projects are making the greatest impact on the local and state levels. At the same time, participants perceive that their projects can have some reach at the national and international levels.

Regardless of participants' perceived impact or performance metrics being met, practitioners in this field know that they are operating in a system in which they are addressing the symptoms of a global problem rather than the root cause of it. This reality uncovers the failures of today's vision of the circular economy where improved recycling practices can independently reduce leakage of plastic into the environment and elucidates challenges in marine debris efforts.

When asked about barriers and limitations, practitioners in this field ranked the top three challenges they face when working on marine debris issues as lack of regulations or laws on producers and manufacturers of plastic, lack of political will, and lack of behavior changes of individual. Ultimately, marine debris practitioners face a disproportionate burden as industry fails to assume responsibility for end-of-life solutions for their products. Marine debris practitioners are placed in a position where they must navigate a world of tradeoffs when creating solutions for plastic pollution.

### Inequity Within Responsibility

## Creating Responsibility 'Scapegoats'

As shown in the above sections, current framing of the plastics crisis is heavily influenced by the plastics industry, whose aims are to deflect attention away from the role of plastic production in fueling the plastic waste crisis by pushing symptom-focused solutions.

By taking control of the plastics crisis narrative, the plastics industry not only dampens the criticism it receives, it also creates alternative scapegoats for responsibility further down the plastics life cycle. Through this process, blame is shifted “onto the so-called ‘unsustainable’ practices of smallholders, corrupt governments, illegal operators, and companies outside their supply chains,” creating harmful narratives of culpability (Mah, 2021; Dauvergne, 2018; p. 54). This in itself is an issue of inequity where burdens of responsibility are placed on other stakeholders along the plastics lifecycle.

## Case Study

# The Fishing for Litter Program in the Netherlands

By Machteld Vergouw

**Background:** Fishing for Litter (FFL) programs have been established to reduce marine litter by incentivizing fishers to collect marine debris. FFL's main objectives include 1) direct marine litter removal and 2) litter prevention and awareness within the fishing sector (KIMO International, 2020). This way, FFL may contribute to behavior change among fishers not only when participating in the scheme, but potentially also over the long term (Wyles et al., 2019). Over the past decade, the concept of FFL has received political support. Since 2010 it has been endorsed by the OSPAR Commission as an approach to reduce marine litter (OSPAR Commission, 2015). The Dutch FFL program has grown to 140 vessels, bringing over 4,090 tons of debris to shore since 2009 (KIMO Nederland en België, 2021). The program is funded by national and local governments as well as the private sector.

**Challenge:** Fishers are disproportionately impacted by marine litter, accruing additional costs and reduced revenue (e.g., reduced or contaminated catch, damaged fishing gear, and safety risks) (Mouat et al., 2010; Newmann et al., 2015; Oosterhuis et al., 2014). Associated costs to the European fishing industry are estimated at €61,7 million per year (Van Acoleyen et al., 2014). Fishers are also in a unique position to play a key role in addressing the marine litter issue. Their fishing practices can contribute to existing debris; however, their work environment enables them to “access marine litter that would otherwise be neglected” (Wyles et al., 2019, p. 49). This case study seeks to understand fishers’ perspectives on their potential to address the issue of marine litter through FFL as a mitigation solution. It does through in-depth, semi-structured interviews with commercial fishers working with diverse fishing techniques in various coastal regions and, to achieve a well-rounded perspective on FFL, with other stakeholders both directly involved and not directly involved in FFL .

## Findings:

**Fishers’ Motivations to Participate:** FFL in the Netherlands generally enjoys considerable support among interviewed stakeholders. And it is viewed as a simple and effective concept that aims to minimize additional financial costs and workload for fishers, while also being of great value to society. Fishers and organizations directly involved in FFL suggest that it has contributed to awareness of marine litter among fishers and stewardship and that the program offers them a tangible course of action to address marine litter and bolster the image of their industry. Economic incentives are generally not considered appropriate since waste collection has continued to become normalized in the Dutch fishing industry.

**Perceived Lack of Recognition:** Fishers strongly experience lack of recognition for their FFL efforts and feel that they suffer from being stigmatized as polluters, without recognition for their sustainable fishing or FFL efforts. Fishers feel that other cleanup efforts frequently and disproportionately overshadow their FFL efforts and results.

**Misalignment Between Burdens and Financial Responsibilities:** Financial government support for FFL efforts is decreasing, while operating costs are increasing due to growing numbers of participants and amounts of collected waste. This has created uncertainty about the project’s future. FFL stakeholders predominantly believe that the scheme should be publicly funded, since the fishers are voluntarily providing a public service for a collective problem. Concerns were raised that 1) FFL costs could be displaced onto fishers through port fees, 2) FFL programs may be subsidizing fishers to dispose of their own garbage, and 3) failing to fund FFL programs may remove incentive for participation if fishers are participating at a cost to their operations.

## Responsibility

### Key Actions

#### **Refocus Responsibility Onto the Root Cause of the Problem: Plastics Production**

Powerful industry groups have ensured that governance prioritizes end-of-life approaches that do not limit ongoing economic growth.

End-of-life approaches are symptom-focused, deflecting attention away from the root cause of the plastics crisis—the production of toxic and wasteful plastics.

#### **Recognize Industry Creates Responsibility “Scapegoats” to Deflect Blame**

By taking control of the plastic waste narrative, big business diminishes criticism of industry’s role in the plastic crisis and shifts the blame onto less powerful actors outside their supply chains, creating “scapegoats.”

Responsibility “scapegoats” serve as distractions from the continuing efforts of big business to avoid responsibilities in addressing the plastics crisis or to derail regulatory actions that could impact them.



# 02

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## Knowledge

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STOP SILENCE

WATER IS LIFE

Chevron

Shell

Mondelez

PEPSI

Exxon

Coca-Cola

## Knowledge

### Why Knowledge?

In the previous section the question of which actors are currently being held responsible for addressing the plastics crisis was examined. When thinking critically about this question, we see that the answer is contingent upon how we frame the plastics crisis. Is it an issue of waste or one of production? Is it driven by irresponsible consumers, ineffective waste management systems, or the overproduction of plastics? The dominant framing of the plastics crisis is that of an environmental problem fuelled by failing waste management systems, low recycling rates, and high levels of waste leakage—and thus requiring mitigative actions that seek to address plastics pollution at the management phase of the full life of plastics. This framing places responsibility for the plastics pollution crisis firmly on the shoulders of consumers and waste managers, while the role of the extractive petrochemical and plastics industries are largely ignored. In this section, the authors examine how the industry has shaped mainstream discourses and knowledge systems that perpetuate the problem. Indigenous and other marginalized peoples and communities and their knowledge systems are excluded from the dominant discourses and narratives that guide plastics governance and waste. The authors discuss how the continued exclusion of these voices, perspectives, and values will continue to result in unjust, inequitable and socio-ecologically harmful outcomes for all.

#### Box 4. **Marine Plastic Pollution vs. Marine Litter**

*Excerpt from Perryman et al. 2022:*

The term “**marine litter**” is prevalent in international literature, international assemblies, resolutions, and multinational environmental agreements in relation to plastic pollution. However, the term “litter” is most often deployed by those in positions of power to assume consumer responsibility for the causes and effects of plastic pollution.

“**Pollution**,” on the other hand, implies broad structural responsibility and thus a potentially powerful, collective, and effective site of response. Using the term “pollution” also emphasizes the much broader range of plastics’ impacts and their socio-material liveliness, while “litter” implies a narrower range of localized and visible impacts. The term “pollution” also captures the toxicants associated with plastics throughout their life cycles, from extraction to post-consumption disposal; in all of their sizes from micro to nano-sized particles; and the novel ecologies that they precipitate.

That is, “**plastic pollution**” captures a broad range of politics and colonial injustices that are systematically and intentionally obscured by using the term “litter.”

## Inequity Within Knowledge

### **Industry Influence Over Knowledge Production & Plastics Discourse**

Industry actors have promoted discourses and actions that delay, derail, and deflect from the approaches necessary to address the plastics problem (Tangpouri, 2021). Their influence over dominant environmental discourses is far-reaching. Utilizing their structural and relational powers with key state and non-state actors, industry actors can establish economic and political rules that enable influence over dominant discourses and the production of knowledge (Clegg et al., 2006; Marti et al., 2008; Banerjee, 2018). That is to say, industry actors can construct ways of understanding problems that may “blind their proponents from seeing alternative interpretations and actions” (Benjaminsen & Svarstad, 2010; p. 387). Some argue that this process thus engenders inequitable outcomes through asserting and maintaining the authority and political power of big business over environmental governance (Gilberthorpe & Banks, 2012; Banerjee, 2008; Bakan, 2004; Henderson, 2001), allowing for ongoing extractive and destructive practices through non-transformative “mitigative solutions” (Ehrnström-Fuentes, 2016; Joutsenvirta and Vaara, 2015).

Specifically, industry actors have influenced the framing of the plastics crisis as an issue of waste for decades, pushing mitigative actions towards end-of-life waste management and recycling approaches rather than actions that might restrict the ongoing production of plastics. This strategy also leads to ongoing neglect of the uneven burdens of plastic pollution and plastics waste management practices. The following case study expands on the discursive strategies employed by industry actors and how these particular discourses contribute to the oversimplification of complex environmental problems that distracts from the structural inequalities that are embedded within the plastics crisis.

## Case Study

# Coca-Cola & Its World Without Waste Initiative

By Dr. Jessica Vandenberg

**Background:** The Coca-Cola brand is as ubiquitous as its waste. It was considered the most valuable brand in the world as recently as 2012. Former president and CEO of World Wildlife Fund Canada, Gerald Butts, even went as far to state that the Coca-Cola Company is “literally more important, when it comes to sustainability, than the United Nations” because of their purchasing power. A purchasing decision by Coca-Cola can immediately reshape a market and the associated environmental impacts overnight (Dauvergne and Lister, 2013). And most relevant to this piece, Coca-Cola is the biggest producer of plastic waste.

**Challenge:** The World Without Waste initiative began in 2018. It is centered around three major goals: 1) To help collect and recycle a bottle or can for every one we sell by 2030; 2) Make packaging 100% recyclable by 2025; and 3) Use 50% recycled material in bottles and cans by 2030 (World Without Waste Initiative, 2018, 2019, 2020). The campaign presents the problem as plastic waste alone, rather than the production of plastics, linking the issue to an outcome of ineffective national waste governance and management approaches. Through the campaign, Coca-Cola is actively engaged in various forms of recycling and waste management programs in multiple countries across the world. It is also involved in multiple partnerships, including those with national governments, international and local NGOs, investment funds, and technology companies. Coca-Cola has served on steering committees to draft national action plans on plastic waste in Ghana and Indonesia. The company has established large-scale recycling systems, often in partnership with other industry actors, and mainly in Global South nations.

**Findings:** The World Without Waste initiative consistently uses discourses that promote delayed action. These discourses parallel those employed by industry and government to delay climate action that pushes for incremental solutions, shying away from approaches that may threaten existing power structures and practices. They also leverage narrow definitions of success, positive framings and entrepreneurial values above transformative efforts and binding standards. Moreover, these discursive tools are not only employed to slow down or derail necessary actions, but also to mask the inequities experienced by those most burdened by plastic waste and its management by conveying logics of “universal responsibility” and “universal vulnerability” (Dunaway, 2015) and promoting uneven representations of different stakeholders.

The redirection of responsibility is one of the dominant delay discourses used by the World Without Waste campaign. Using this tactic, public attention is deflected from industry responsibility for the plastic waste crisis towards individuals by presenting: 1) Coca-Cola as a collective victim to the crisis through language that invokes ideas of universal vulnerability and 2) individual consumers as the driving force of plastic waste and a clear target for policy action. These representations are achieved through the use of the collective “we” and neoliberal constructs of the “self-enlightened consumer,” “environmental citizenship,” and “universal responsibility.”

For example, the campaign uses the pronoun “we” to describe the collective Coca-Cola, their World Without Waste initiative partners, and the global population, mainly when describing the problem of plastic waste as one that universally impacts all people. Framing the problem as a collective concern distances Coca-Cola as a source of the problem and of any obligation to address it. It invokes the idea of “universal vulnerability” where

all people are susceptible to the harms of plastic waste. By universalizing the problem, it ignores the systemic inequities of the burdens of plastic waste. This rhetorical tool is not a unique feature of corporate environmentalism, but instead mirrors mainstream environmentalism which has historically lumped all actors, including industry, as equally powerless against an environmental problem (Dunaway, 2015).

Pushing non-transformative solutions is a second dominant delay discourse implemented through the World Without Waste campaign through representations of: 1) Coca Cola's leadership and successes in addressing the plastic waste problem (i.e., all talk, little action), 2) the potential role that technological improvements can play in solving the crisis (i.e., technological optimism), 3) the circular economy of plastics as central to solving the plastics crisis (i.e., plastics solutionism), and 4) voluntary market-driven policies versus regulatory approaches (i.e., no sticks, just carrots). These policies allow industry to maintain current production trajectories and distract attention from the actions necessary to solve the plastic waste crisis. These strategies also neglect the embedded inequities of such neoliberal solution-making, as they are often entangled with assumptions of universality, simplifying problems and thus erasing inequities that are implicit within environmental problems, such as plastic waste—inequities that are often even more severe within the Global South context in which most of these programs are implemented.

An example of this discursive strategy in the World Without Waste campaign is the “No Sticks, Just Carrots” discourse. It focuses on deregulation, arguing that only voluntary policies should be pursued, especially those that expand consumer choices. For example, the 2018 World Without Waste report states, “If you guarantee a market for your bottles, people will start collecting them ...” (2018 Report, p. 27). This quote emphasizes the value of voluntary solutions but its logic also simplifies human behavior. It ignores the drivers and barriers that may influence whether an individual may engage with individualized forms of management. This logic of market incentives as the dominant driver of change is central to the World Without Waste campaign and undergirds most of the solutions that are either currently implemented or proposed. Technological solutions and recycling infrastructure are assumed

to be sustained through potential market value of recycled plastics and the expansion of a plastics economy. Meanwhile, some existing programs established through Coca-Cola partnerships have been reported for having deplorable working conditions and paying unlivable wages.

**Conclusion:** The World Without Waste initiative reflects a delayed action discourse in which responsibility is redirected towards individuals and the responses to the waste crisis are not transformations. Moreover, analyzing the campaign reveals clear concerns of equity, a lack of representation of stakeholders and partners, and language that veils the unequal burden of plastic waste. If equitable solutions to marine litter and plastic waste are to be realized, we must think critically of the systemic inequities linked to corporate-led governance actions and whether these approaches can be structured in a way that can lead to effective and equitable governance solutions.

### Inequity Within Knowledge

## **Lack of Recognition for Indigenous and Local Knowledge Systems in Governance and Management**

As demonstrated in the previous sections, discourses and plastic pollution related policy responses are dominated by elites from high GDP countries, particularly industry actors invested in the growth of the petrochemical and plastics industries (Dauvergne, 2018; O’Neil, 2019). This asymmetry of power over plastics production and pollution governance has excluded a diversity of actors across the full of plastics and alternative forms of knowledge and world views (to dominant Eurocentric scientific disciplines), producing harmful outcomes for already at-risk communities (O’Neil, 2019). These communities and their knowledge systems need to be incorporated into national, regional and global plastics policy frameworks. This is especially critical given the expectations of wealthier countries that low GDP nations will continue to engage in the plastic waste economy to support the global circular economy for plastics they envision (Schroeder, 2019; Mah, 2021.) Given these expectations and the inequity of plastic waste burdens, it is imperative that systemically marginalized knowledge systems be effectively integrated into the science-policy nexus. This may address the ongoing injustices of plastic waste (Pratt et al. 2016). The following case study demonstrates how the exclusion of Indigenous values and knowledge systems in plastic waste governance perpetuates and creates new forms of waste colonialism.

## Case Study

### Waste Colonialism in Aotearoa New Zealand

By Matt Peryman, Romilly Cumming, Tina Ngata, Associate Professor Trisia Farrelly, Dr. Sascha Fuller, Dr. Stephanie Borrelle

**Background:** Waste colonialism is broadly understood as the movement of waste from high GDP to low GDP countries and is embedded in international waste management treaties that reinforce harmful power disparities. These disparities contribute to the growth of corporate imperialism, environmental (in)justices, slow violence, environmental racism, and human rights violations. In this case study, waste colonialism serves as a valuable conceptual tool to analyze plastic pollution as it relates to sovereignty in Aotearoa New Zealand: specifically, the right to a safe, clean, healthy, and regenerative environment, and cultural, biological, and corporeal sovereignty. Plastic pollution as waste colonialism is explored from Aotearoa's geographic, political, economic, socio-cultural, and historical viewpoint. Experts, leaders, and advocates in the fields of waste, plastic pollution, Indigenous rights, and waste colonialism informed this study and concluded that Māori, as an Indigenous Oceanic people, experience marine plastic pollution differently and more acutely compared to non-Indigenous people; and that corporate imperialism as a key driver of plastic pollution harms everyone.

**Findings:** Participants' understandings of waste colonialism were locally contextualized and historicized. These understandings were at odds with the common definition of waste colonialism as the movement of waste from high to low GDP nations. The disproportionately high impacts of colonialism and plastic pollution on Māori and Pasifika communities, particularly coastal communities, low-income households and those living subsistence lifestyles emerged as a key theme. Participants discussed the implications of the legitimization of dominant Eurocentric sciences to the exclusion of mātauranga Māori (Māori knowledges, practices, and innovations) for

effective plastic pollution prevention policy frameworks. They were particularly concerned that the production and manufacture of toxic plastics are state-sanctioned, leading to unregulated exposure of bodies and the environment to the intergenerational harms of plastics pollution. New Zealand's colonial legal system was cited to exemplify the lack of consideration and respect for mātauranga Māori and te ao Māori (Māori worldview) in addressing environmental challenges. Ontological binaries separating humans from nature have become naturalised through the 'colonization of the mind', an ontology that jars against the ontological relationality fundamental to te ao Māori. This ontological relationality is expressed in the way in which Māori identify as tāngata whenua (people of the Land), tāngata moana (people of the Ocean), and kaitiaki (guardians/caretakers of the environment), due to shared genealogical and ecological connections. The responsibility of kaitiaki to protect Lands and Oceans becomes an extraordinary task when Māori communities are also expected to heft the multiple burdens of imperialism and marine plastics pollution as colonialism.

The kupu Māori [Māori] word for 'plastics' is 'kiri hou'. 'Kiri' means 'skin' and 'hou' means 'new' translation being 'new skin' or 'the new skin of the world' (pers. comms, 14 December 2020). Understanding plastics through this definition draws attention to Māori displacement. That is, kiri hou may be conceptualised as creating a barrier between a healthy environment and its people. Indeed, the systematic dispossession of Māori Land and Oceanic territories during European colonization, as well as dominating and exclusive European sciences, have served as significant barriers to the development of inclusive and rights-based policies with the greatest potential to prevent plastic pollution.

Despite their long history of successful conservation practices, Māori and Indigenous peoples' worldwide, remain politically underrepresented at all tiers of governance. In addition, global institutes like the United Nations and the World Trade Organization are inherently Eurocentric and have consistently omitted, dismissed or misinterpreted Indigenous relationships with Lands and Oceans. The study emphasizes the need for Indigenous peoples' full and meaningful participation in multi-level global governance. As a product of colonization, capitalism has driven skyrocketing global plastics production and pollution volumes. Prior to colonization, Māori had established regenerative circular economies. However, under colonial jurisdiction, the economy was transformed to become dependent on extraction of Māori Lands and Oceans, industrialization, and the externalization of the environmental and human health costs of resource extraction and hyper-production.. In the process, it became increasingly difficult to distinguish between industry and states in terms of roles and responsibilities for these costs.

According to Te Tiriti o Waitangi (Aotearoa's founding document), Māori are guaranteed authority over decisions that affect them (Waitangi Tribunal, 2014), particularly those that affect Māori food sovereignty[1] (Huambacho, 2018). The current inequities in decision making due to colonial power structures were cited as barriers to Māori participation in policymaking, business, and science. As colonial political and economic systems continue to disenfranchise Aotearoa's people today, there is a growing movement to re-affirm Māori co-governorship so that Māori and all those who call Aotearoa home can better protect their communities and natural environments. This right is pivotal to the process of decolonization and Indigenisation, the establishment of equity-based political and economic systems, and the re-centering of Māori worldviews in governance and the everyday lives of Māori (Tuhiwai Smith, 1999; Ngata in Happen Films, 2020).

**Conclusion:** This study highlights that waste colonialism is more than the movement of waste from high GDP to low GDP countries. Plastic pollution as waste colonialism involves complex international economic and political systems and processes. The study demonstrates the processes of waste colonialism as historical and ongoing, and that the different and disproportionate impacts felt by communities are the culmination of multiple scales of dysfunctional and unjust governance, including that of global environmental governance institutions.

Social, political, and economic inequities legitimized and perpetuated by colonial power structures and exploitative economic systems have severed healthy relationships between people, culture, community and nature. The findings draw attention to how plastic pollution as waste colonialism perpetuates ecological degradation and social inequities. The study also explores opportunities for a more equitable, regenerative, and sustainable economy for Aotearoa.

Using 'kiriho' as a conceptual tool allows us to understand plastic pollution as a new colonizing 'skin' of the world, and to reflect on how plastics pervade our lives, societies, cultures, economies, ecosystems,, bodies, and spirits. A decolonized, indigenized, and thereby holistic, relational, and integrated socio-ecological systems approach to plastic pollution grounded in Indigenous worldviews such as te ao Māori is vital if we are to prevent, mitigate, and remediate plastic pollution. The continued lack of opportunities for full and meaningful Māori participation, representation, and leadership in the governance of plastic pollution, climate change, and biodiversity loss will continue to disproportionately affect Māori. The decolonization of plastic pollution responses and policy in Aotearoa is an essential step forward for effective environmental stewardship and socio-ecological justice for all New Zealanders. Our approach has initiated discourse on how waste colonialism resonates across Aotearoa. We advocate for further place-based, culturally contextualized studies on plastic pollution as waste colonialism in Aotearoa and beyond.



## Knowledge

### Key Actions

#### **Limit Industry Influence Over Knowledge Production and Plastics Discourse**

Powerful industry groups have shaped the dominant discourse defining the plastics crisis as an individualized problem, deflecting attention away from the responsibilities of plastics producers and manufacturers as the biggest polluters and those with the most power to make the most change at source, while also distracting attention away from the structural inequalities of plastic waste burdens.

#### **Recognize and Value Indigenous Knowledge Systems in Governance and Management**

The exclusion of Indigenous knowledge systems from the dominant discourses on plastic waste governance has led to socio-environmental injustices that perpetuate harmful colonial and capitalist ideologies and agendas.

## 03

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# Well-Being

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## Well-Being

### Why a Well-Being Approach?

#### Dr. Elaine M. Faustman & Jill Falman

Assessing human health risks from marine litter requires a multidisciplinary approach for equitable evaluation and decision-making. Marine plastic pollution impacts human health on multiple levels (i.e., individual, community, and public policy) and through various pathways that are not yet fully understood. Human health is more than the absence of disease (Constitution of the World Health Organization 1946): to encompass the multi-level dynamics that influence health, inclusion of environmental, social, biological, psychological, economic, and political attributes is essential (VanderWeele 2017; Betley et al. 2021). These factors are the basis for well-being and should be analyzed when evaluating the consequences of marine litter on human populations.

Research has primarily focused on dimensions of physical health impacts via direct exposure pathways, such as inhalation, ingestion, and dermal contact from chemical contamination of waters and marine plastic pollution (Yee et al. 2021). Indirect pathways include plastics facilitating microbial growth in marine systems and those that affect human and ecological well-being. The effects from indirect exposure pathways can include illness from exposure to harmful algal blooms as well as decreased fish availability for consumption, livelihoods, and cultural access (Brennan and Portman 2017; Naik et al. 2019; United Nations Environment Programme 2021).

A socio-economic-ecological perspective broadens the concept of well-being by incorporating nature-related values and interactions among others based on connections to culture, social relationships, freedom, health, security, and education (Sangha et al. 2015; Donatuto et al. 2016). We can further conceptualize well-being in a framework to operationalize measures

that include connections, capabilities, conditions, and cross-cutting domains (See Figure 1) (Breslow et al. 2016). By recognizing these indirect effects and applying a multi-level perspective, we can begin to develop equitable assessments of marine litter impacts on human health. In this section, we explore the multitude of impacts experienced by communities across the globe who are heavily burdened by marine plastic pollution to highlight the diversity of perceived impacts and the importance of understanding impacts at the community level.

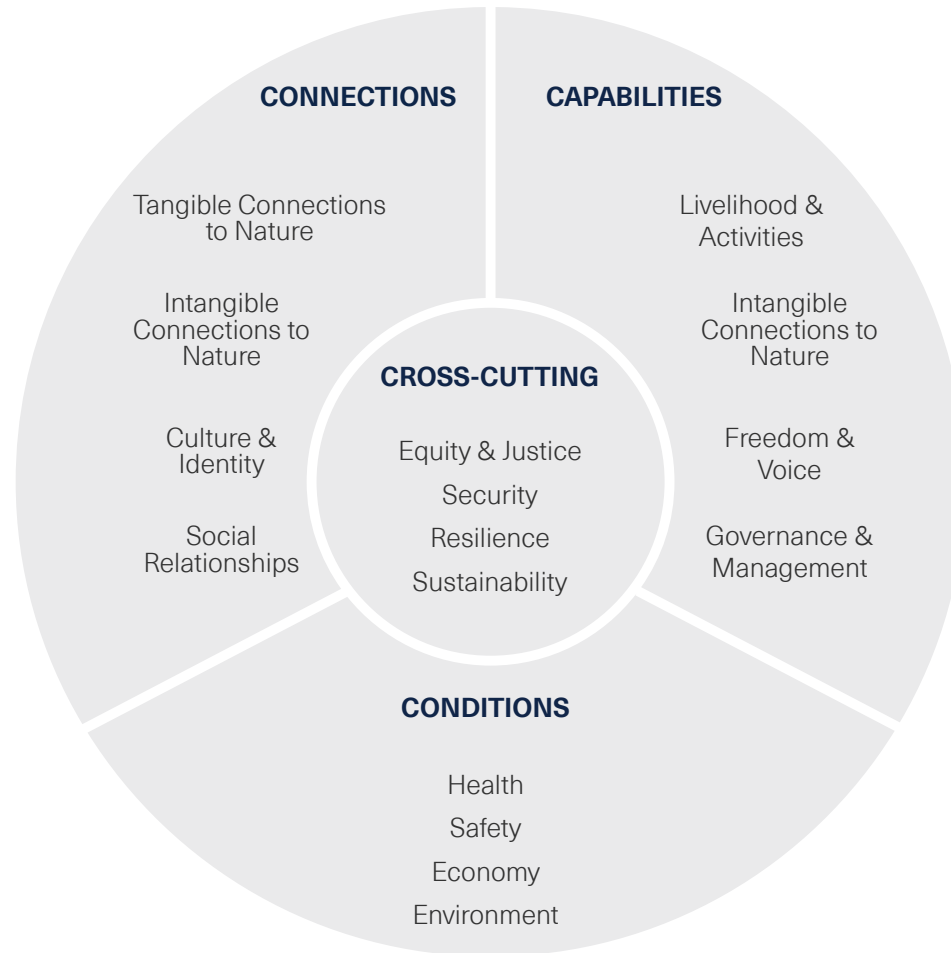


Figure 1. **The 4-C's Conceptual Framework of Human Well-Being**

(Re-printed with permission from "Conceptualizing and Operationalizing Human Wellbeing for Ecosystem Assessment and Management," by S. J. Breslow et al., 2016, *Environmental Science and Policy*, 66, p. 250-259. Copyright 2022 by Elsevier.)

### Inequity Within Well-Being

## **Prioritizing Community Voices in Understanding Impacts of Marine Plastic Pollution**

There is no single definition of human well-being, although there is the basic agreement is that “well-being includes the satisfaction of material needs, the experience of freedom, health, personal security, good social relations, and a healthy natural environment” (Alkire 2002; Sangha et al. 2015; Sen 1993; 1999). To effectively comprehend health effects beyond physical health, it is essential to understand the communities’ values and how they connect with oceans by working with them to define well-being. This is especially important for small island and coastal communities that are more likely to be impacted by the increasing presence of marine litter.

## Case Study

# Inequitable Social and Environmental Burdens of Marine Litter Pollution

By Ivy Akuoko

This case study explores marine plastic pollution in Elmina, the capital of the Komenda-Edina-Eguafo-Abrem Municipality in Ghana's Central Region. This case study draws on the existing literature and the author's experience conducting research on marine litter and waste management across coastal communities in Ghana.

**Background:** Fishing is the main economic activity of the people of Elmina. Elmina has the biggest fishing harbor in the Central Region of Ghana, which is the third largest in the country hosting medium and small-scale artisanal fishers (Jonah, 2015). Not only is the coastal environment economically significant, many Ghanaians also have a spiritual attachment to the coastal environment, specifically the Benya lagoon. Unfortunately, this sustenance system is on a life support as the fisheries sector has been experiencing declines for some years now; it is no longer profitable, as it is at the verge of collapse (Oirere, 2019; Akpalu et al. 2018; Coastal Resource Center, 2013). This decline has been attributed to factors such as light fishing, increased effort, operations of industrial trawlers, and nature (British Plastics Federation, 2021). An emerging issue when it comes to fisheries decline is the role of marine litter, specifically plastics (Dika et al. 2018; Boakye, 2009; Holden et al. 2011). This has attracted much attention because of Ghana's high dependency on plastics.

Plastic usage in Ghana is similar across all cities, towns, villages, and communities. With little knowledge of the different types of plastics and their corresponding safety among most Ghanaians, plastic wares are used with little consideration for safety. Sadly, the waste management system currently in place is insufficient to cater for the huge volumes of plastic waste generated on daily basis

**Challenge:** Plastics have contributed positively to Elmina through supporting sanitation, health, and the sale/purchase of goods. Like much of the world, plastics have become ubiquitous in the city. Inadequate waste management practices and littering impair the recycling, reuse, and safe disposal of plastic waste, which impacts economic activity, health, and the coastal environment.

**Findings:** Coastal communities are both the victims and perpetrators of the marine plastics issue in Ghana. While fishers requested a plastic ban on plastics (Ackon-Mensah, 2018) and have expressed concern about marine litter on their livelihoods (Mensah & Enu-Kwesi, 2019; Dika et al. 2018), they are also noted to return plastic debris caught in their nets to the environment, rather than seek alternate disposal sites. Those in the salt industry have also noted economic consequences of marine plastics (Mensah & Enu-Kwesi, 2019; Dika et al. 2018). Communities have expressed a need for improved waste management practices, in order to reduce or prevent their contribution to the issue. On the other hand, the government of Ghana has expressed that it has no intention of banning plastics as requested (Dzido, 2019).

There has been little effort to address marine plastic pollution in Ghana. However, there have been some efforts to improve waste management more broadly. For example, Ghana ratified several international treaties and conventions on solid waste management. There are also nearly a dozen national environmental policies, acts, and guidelines that address solid waste management. However, there is little evidence of the implementation of these measures in Ghana, or in Elmina specifically.

Initiatives by government and non-government bodies to address solid waste management include the distribution of wastebins (Claude, 2019; Accra Metropolitan Assembly, 2019; CitiNewsroom, 202; Graphic Online, 2019), equipment donations for waste collectors (MESTI, 2019), reuse of plastics for bricks and fuel (MESTI, 2018; Baidoo, 2019), and improving the recovery of energy from plastics. Plastics industry members have implemented efforts to provide education and support waste management efforts (GRIPE, 2021). Further, Ghana is a signatory to the Global Plastics Alliance and hosted the 2017 National Plastic Waste Management Forum which facilitated the development of the blueprint for plastic management in Ghana (Marine Litter Solutions, 2021). Ghana is also a member of the Global Plastic Action Partnership (Cann, 2021).

**Equity Implications:** Ghana's waste management system lacks capacity for waste segregation and effective recycling. Financial constraints and inadequate infrastructure are major challenges in Ghana's waste management sector (Samwine, 2017; United Nations, 2003; Clause, 2019). This may contribute to the lack of effort to address marine litter.

The power imbalances that contribute to inequities in waste management and plastic pollution in Ghana remain unexplored. However, coastal communities, like Elmina, tend towards lower socioeconomic status, poorly planned infrastructure, and unplanned development. When these areas are developed into resorts and other privatized properties, there is a shift to improved waste management, suggesting that access to financial resources is key for effective waste management.

The root causes of marine litter in Elmina include poor infrastructure, implementation of legislation, and social inequity.



## Case Study

# Perceptions of Marine Litter When Intertwined with Displacement in Miyakojima, Okinawa Prefecture, Japan

By Karin Otsuka Trudo

The focus of this study is Miyakojima, an island with a population of roughly 55,525 people situated within Okinawa Prefecture of southern Japan (Miyakojima City, 2020). The author conducted 24 semi-structured interviews of local residents, document analyses, and participant observation in Miyakojima to inform this case study.

**Background:** The Okinawa Islands have a history of colonization and displacement of the Indigenous peoples. Once referred to as the Ryukyu Kingdom or the Lewchew Kingdom, the Okinawa Islands were absorbed into the Meiji government of Japan in 1879 through military force (Matsushima, 2010; Rabson, 2012), beginning a period of assimilation to establish Okinawa Prefecture as a unified, homogeneous part of Imperial Japan. During World War II, the Okinawa Islands were used as a strategic military base, causing the displacement of residents and their agricultural activities as well as attacks on the islands. The 1952 San Francisco Peace Treaty placed the islands under the control of the U.S. Military High Commissioner (Lambert, 1996). Control of the islands was returned to Japan in 1972, leaving the prefecture with more Japanese Self-Defense Forces and U.S. military than other prefectures in Japan (Aoyagi, 2016; Inoue, 2004; Matsushima, 2010). More recently, tourism has been prioritized on the islands, forcing a reliance on the service sector. As the tourism sector grows the redistribution of land by mainland construction companies is placing economic strain on locals, who have seen rental fees double (Okinawa Times, 2019).

The result of these colonial and outsider-focused development processes is the othering of Okinawans and the preferential treatment towards visitors and outsiders, despite islanders' history and connection to their home. In Miyakojima, insiders are those who were born on the island and they refer

to themselves as jimoto, or locals. Outsiders are naichi—Japanese from the mainland who have come to live as residents on the island (Miyakojima City, 2016). It is important to note that cultural heterogeneity between the islands of Okinawa Prefecture exists and so the blanket identification of Uchinanchu—a term used to refer to Okinawans by natives and immigrated descendants for the people of Miyakojima—may not be appropriate.

Until now, efforts to understand and address marine litter and its impacts have focused on Small Island Developing States—a group of island countries identified by the United Nations—that are notably impacted by this issue. However, the small islands within developed countries have historical, political, socioeconomic, and cultural conditions that shape the marine litter landscape within the local communities. Marine litter efforts should consider the circumstances of islands within developed nations and the unique challenges that this context creates.

**Challenge:** How can marine litter management solutions be developed in a way that incorporates the historical, political, socioeconomic, and cultural conditions that shape the communities of Miyakojima?

**Findings:** Twenty-three participants expressed concern about marine litter and its implications for the community.

- Insider participants suggested that outsiders who choose to settle in Miyakojima may have done so in pursuit of the beautiful environment, and thus seek to preserve their aesthetic attachment to the island. They may also be more exposed to large-scale environmental movements in the mainland that predispose them to environmental stewardship.

- Insider participants mentioned that they regularly engage with information about the impacts of marine litter to the local environment and economy but are not necessarily provoked to engage in interventions. Reasons for this include lack of political will, preoccupation with sociocultural commitments, indifference expressed by the local community, and prioritization of business and development within the island's environmental strategy plans.
- Among those who engage in marine litter cleanup activities, insider and outsider participants disagree about how they should be organized. Marine litter cleanup events hosted by the municipal government are only organized on popular tourist beaches and thus seen as a facade for environmental stewardship. Beaches and locations that tourists do not frequent are often cleaned by insider and outsider participants. However, some insider beach cleaners feel the same way about outsider beach cleaners, who they perceive as also focusing on tourist-frequented beaches. There have also been tensions in the past when families of fishermen were compensated for picking up litter. Marine litter thus held monetary value to locals, who felt threatened by outsider beach cleaners who voluntarily began removing litter. Outsiders recounted times when they were threatened and had their homes vandalized as a result of these tensions.
- Insiders and outsiders both reported a perceived lack of cooperation or interest from the other parties in addressing marine litter in the way that they perceived as most meaningful. This may be a result of expectations that the other groups should relate to place in the same way as themselves and an association of place attachment with marine litter stewardship (Haartsen & Stockdale, 2018; Trimbach et al., 2020).

#### **Equity Implications:**

- Insiders reported a growing distance from the island's beaches while being concurrently subject to the consequences of development, such as traffic congestion and overflowing waste receptacles. This evokes feelings of displacement from both the inland and coastlines.
- Insiders reported greater urgency to address their sense of home and belonging, perhaps as a result of increasing concerns related to the socioeconomic impacts on local lifestyle and on places that hold cultural significance, with tourist locations seeing more efforts to clean and maintain the beaches, and less visited areas being ignored or used as dumping grounds for decommissioned ships.

## Case Study

# Marine Litter Entangles Ecuadorian Mangrove Communities

By Karly McMullen

This case study explores the social narrative between marine litter and how its presence impacts community well-being in one Ecuadorian mangrove region, Puerto Hondo. Ecuadorian researchers, Juan José Alava, Paola Calle, Ana Tirapé, and Omar Alvarado-Cadena, conducted 29 interviews among local residents in 2019 to inform this case study.

**Background:** Ecuador's province of Guayas was once home to thousands of hectares of mangrove forests. However, human-induced threats and land alterations have decimated some of these areas. Industrialization, urban sprawl, and shrimp farming have put pressure on the mangroves. More than 34,000 hectares of mangrove forests were lost in the Gulf of Guayaquil from 1984 to 2007 (CLIRSEN-PMRC, 2007; Carvajal and Alava, 2007), resulting in high economic and social-marginal costs: mangrove forests are important and unique ecosystems, offering coastal buffer zones, coastal protection, key ecosystem services, and economic opportunities. These delicate ecosystems are also culturally important to the communities that exist among them and rely on them for small-scale (artisanal) fishing, ecotourism (Andrade Ojeda, 2014; Guevara, 2007; Rocio Sarmiento Arias, 2011), and related businesses (Guevara, 2007). Plastics play an important role in accessing economic opportunities for those who participate in waste picking in Puerto Hondo, however the mangrove ecosystems and health of the community are threatened by plastic pollution.

**Challenge:** Guayas' mangrove regions and unique biodiversity have faced severe anthropogenic threats and land alterations. While mangrove forests offer economic opportunities, alterations and pollution in these regions, including marine litter, can come with high environmental and socioeconomic costs to local communities.

## Findings:

### *Defining the Problem: What Does "Marine Debris" Mean to Puerto Hondo Residents?*

- Community members most often associated the term "marine debris" with plastics over any other materials.
- Twelve participants noted marine debris accumulates near the mangrove roots; others referenced locations including the estuary, sea arms, creeks, and beaches (including the recreational areas).
- Notably, some interviewees cited a greater prevalence of marine litter around Guayaquil city compared to Puerto Hondo.

### *Theme 1: Marine Plastic Threatens an Already Stressed Economy and Concerns Arise Around Community Health*

- Twenty-three participants expressed concern about marine litter and its implications for the community.
- Seventeen interviewees feared that marine debris hinders both economic opportunities and human health in the region.
- Economic concerns related to marine debris included declining fish stocks, theft at sea, and an expected ecotourism decline.
- Human health concerns related to marine debris included skin conditions, throat issues and the flu, and illness due to consumption of contaminated fish.
- The cognitive burden of concern over marine litter was felt more strongly among senior age cohorts.
- Most interviewees expressed a strong interdependence between community life and the mangroves.

### ***Theme II: Waste Management, Plastic Taxes, and the Burden of Problem-Solving Placed on the Consumer***

There are multiple government and non-governmental bodies that bear the responsibility of protecting Puerto Hondo's mangroves:

- Ecuador's Ministry of Environment heads the environmental arm of the government for the country. Puerto Hondo mangroves are part of the Manglares El Salado Fauna Production Reserve (Andrade Ojeda, 2014; Rocio Sarmiento Arias, 2011) supported government entities and the Cerro Blanco (White Mountain Hill) Protected Forest (Guevara, 2007) sponsored by the private and industrial sector (Guevara, 2007).
- The Puerto Hondo Association of Small Farmers is an ecological club with power over land-use licenses (Guevara, 2007).
- There is a committee for the improvement of the mangroves of Puerto Hondo, which has a direct link to the municipality of Guayaquil (Andrade Ojeda, 2014).

With so many parties involved, the interviews revealed confusion regarding who is addressing marine pollution. Waste management is also fragmented and has produced inequitable plastic waste burdens. In 2019, Puerto Hondo signed a seven-year contract with a new waste management company, Urvaseo, which has a much larger waste collection fleet. The waste management contract cost increased from USD \$167 million for a ten-year contract signed in 2010 to USD \$402 million for the new contract (El Universo, 2020a; El Universo, 2020c; El Universo, 2019). It is uncertain if the increase in waste management fees will be a future burden for taxpayers.

Outside the main community hub of Puerto Hondo, non-planned housing residents leave their garbage in the estuary for pickup by boat via a separate company, Visolit. This remote community was left without waste collection up until recent years (El Universo, 2010).

Informal waste collectors, known locally as chamberos, make their livelihood of collecting plastic litter, and are often discriminated against for this occupation (El Universo, 2021a). Job opportunities are scarce in the community: interviewees consistently reported a decrease in work opportunities, which is exacerbated by the effects of contaminated waters

and decreased sustenance from the sea. It is uncertain what the increased waste management fleet will mean for the chamberos.

At a national level, a plastic bottle tax and bag tax, referred to as the "Impuesto Redimible a las Botellas Plásticas no Retornables" and "Impuestos a los Consumos Especiales," were introduced in 2019 and 2020, but have received backlash from the business owners who have already bought raw material or machinery for plastic production (Municipality of Guayaquil, 2018; El Universo, 2021b; El Universo, 2020b; El Universo, 2021d; El Universo, 2021e; El Universo, 2012). Community members and small businesses may not be able to bear the weight of a plastic tax. A consumer and small business tax highlights the unjust distribution of costs and responsibilities in terms of working towards a litter-free estuary.

Formally, Fundación Natura, a volunteer-based non-profit organization that aims to conserve the environment and wildlife, has been known to undertake community cleanup efforts (known as mingas) in the area and to conduct educational campaigns for youth on the adverse impact of littering. Overwhelmingly, solutions suggested by interviewees included mingas.

### ***Theme III: Cleaning Up Someone Else's Mess***

Interview analysis revealed a lack of community connection and cohesion on the issue of marine debris, and the unbalanced responsibility over what to do and who should do it.

- Blame for marine debris was split across different local actors: Puerto Hondo community members were most frequently cited as responsible for marine debris, followed by tourists and the shrimp aquaculture industry (known as camaronerías). The residential community of Puerto Hondo (which is outside the mangrove area), incoming boats and yachts, and street food vendors were infrequently mentioned.
- Recent studies revealed that much marine debris is likely brought in from other communities through the Guayas River or from southeasterly sources of the Pacific via the Humboldt Current (Gaibor et al., 2020; Salazar et al., 2022).
- A cognitive burden associated with cleaning up the litter left behind by others—including other residents, tourists, and companies—was noted.

**Equity Implications:** Overall, marine plastic in Puerto Hondo is a hindrance to the community's well-being, predominantly in terms of livelihood, food security, public health, and natural resource security. Economic opportunities are confined by the health and success of the mangrove ecosystem. Puerto Hondo's mangroves have been a cornerstone of the community. They have provided a place of recreation for local community members and are significant to the community's way of life. Equitable solutions to reduce marine plastic pollution are urgently needed in Puerto Hondo.

## Well-Being

### Key Actions

#### **Prioritize Community Voices in Understanding Impacts of Marine Plastic Pollution**

A well-being approach recognizes that human health is more than the absence of disease and includes environmental, social, biological, psychological, economic, and political attributes.

A well-being approach is critical to understanding the range of direct and indirect impacts that stem from marine plastic pollution.

#### **Acknowledge That There is a Diversity of Voices, Values and Needs**

A well-being approach contributes to more equitable modes of impact assessment that acknowledges the diversity of needs and values that occur across different communities.

A well-being approach recognizes diversity as critical to avoiding further marginalization related to race, age, class, citizenship, gender and other factors.



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# 04 Coordination

# 04

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## Coordination

### Why Coordination?

Plastics governance is challenging and complex, fueled by increased and diversified global production, consumption, and pollution sources. Our current plastics governance architecture—fragmented and uncoordinated—is unfit to address the growing plastics crisis, in part because it fosters inequitable plastic waste burdens. **Opportunities for exploitation arise from loopholes and lack of enforcement in many national and subnational policies, as will be outlined in this section.** We begin with an overview of the international regulatory regime for plastic pollution. Second, we examine the loopholes and gaps in the Basel Convention that allow for the ongoing displacement of plastic waste from high income to low income nations, perpetuating waste colonialism practices and obscuring responsibility. We then discuss how fragmented production standards and regulations produce “balloon effects” where squeezing out (or regulating) plastics production in one country leads to the inflation of production in others.

## The Current International Stage

By Dr. Elizabeth Mendenhall and Dr. Solène Guggisberg

Marine plastic pollution has been recognized as a global concern, spanning domestic and international waters and impacting all reaches of the oceans. Global concern about increasing plastic pollution and the need to address the issue has given rise to various levels of policy and regulation related to the management of marine plastic pollution—from international to domestic and even local jurisdictions.

### Legally Binding Instruments

*The United Nations Convention on the Law of the Sea (UNCLOS)* contains provisions related to marine pollution (Part XII of UNCLOS, “Protection and Preservation of the Marine Environment” and Articles 194 and 207 specify the obligation for states, in particular coastal states, to “reduce, prevent, and control” land-based pollution, using “best practical means” and all “necessary measure”). However, it has been unsuccessful in addressing the issue of marine plastic pollution. Weak language and a lack of enforcement mechanisms have been highlighted as obstacles to meaningful progress in this area. At the same time, the presence of the Common Heritage of Mankind principle is seen as a strength of UNCLOS, as it acknowledges the shared history and importance of the ocean as a common resource. The dispute settlement system created by UNCLOS also creates opportunities for activating, applying, or clarifying these obligations.

*International Convention for the Prevention of Pollution from Ships (MARPOL) (1973/78)* and the *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention (1972))/London Protocol (1996)* address ship-based pollution. MARPOL Annex V (Prevention of Pollution by Garbage from Ships), an optional component, has been ratified by over 150 countries and addresses

disposal of plastics at sea. The London Protocol, a follow-up to the London Convention, provides updated and stricter rules, reporting processes and a formal dispute procedure for violations of its rules on dumping. Further, the Protocol adopts a precautionary approach that bans all dumping, with the exception of specified items. However, the transition from the London Convention to the London Protocol is not mandatory, and has not been universally accepted.

*Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (1989)* addresses the international movement of hazardous wastes. The convention includes conditions for the trade of these products, such as informed consent and required reception processes in the importing state. Since its initial adoption in 1989, this Convention has been amended in some major ways. The scope of the Convention was modified in 2019 to more adequately address plastic waste. In the same year, the Ban Amendment, which establishes stricter rules for trade between nations who are a part of the Organisation for Economic Co-operation and Development (OECD) and non-OECD nations, entered into force. However, there are concerns around compliance and loopholes weakening the system. While trade with non-parties is not allowed, except under specific agreements that are expected to meet the same environmental standards outlined in the convention, there is no formal verification process of these agreements’ contents or application. Additionally, the Basel convention only addresses the international trade of waste, leaving countries to their own devices within their borders. This creates potential for inequitable waste management practices domestically.

*The European Union (EU) Waste Shipment Regulation* pertains to waste trade between EU members and third parties. The regulation is said

to implement the Basel Convention, but some of the rules adopted for intra-EU trade of plastics are less stringent.

*OECD Decision on the Control of Transboundary Movements of Wastes Destined for Recovery Operations* outlines simplified procedures for trade between OECD members. While there is a prior informed consent procedure, it is assumed that the absence of an objection is consent and the procedure may be avoided by using pre-consented recovery facilities. In this decision, OECD members have failed to agree to include all the plastics covered by the Basel Convention.

*Stockholm Convention on Persistent Organic Pollutants (POPs)* (2001) addresses the emission of listed POPs into the environment. This may include plastics containing POPs, such as flame retardants and plasticizers.

### **Voluntary Agreements**

*Montreal Guidelines for the Protection of the Marine Environment Against Pollution from Land-Based Sources* (1985) is a voluntary, non-binding agreement that outlines the “strategies and control options” required to address land-based marine pollution (Wells and Côté 1988, 20).

*Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA)* (1995) is a voluntary, non-binding agreement with limited resources. There is no obligation for states to meet any benchmarks or performance indicators.

*Honolulu Strategy* was developed by the United Nations Environment Programme (UNEP) and the United States’ National Oceanic and Atmospheric Administration to address land- and sea-based plastic pollution. However, the Honolulu Strategy was not embraced in full and The Honolulu Commitment was adopted at the Fifth International Marine Debris Conference in 2011 instead. This is another voluntary, non-binding agreement intended to provide guidance to member states.

*Global Partnership on Marine Litter* (2012) is a UNEP program that seeks to facilitate shared knowledge and cooperation in addressing marine plastic pollution.

*United Nations Environment Assembly Resolutions (UNEA)* conducted research and passed resolutions on the issue of marine litter and plastics

from 2014 to 2019. All members of the United Nations are also members of this environmentally focused body. However, there has been criticism that actions have focused on technological solutions and waste management, rather than addressing the root of the plastics issues and those ultimately responsible for plastic pollution.

*Sustainable Development Goal 14 (SDG 14)*, target 14.1: “By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.” SDG 14 lacks specific targets and reliable indicators.

### **Regional Agreements**

*Regional Seas Programme* is a UNEP initiative to facilitate regional cooperation amongst states sharing a sea. While the Regional Seas Programme protocols provide some binding rules related to marine pollution and litter in particular, they are fragmented and not universally adopted.

*Regional Fisheries Management Organizations* are high seas and transboundary fisheries management organizations. They may develop measures to address marine pollution originating from fishing vessels within their management area.

The international regulatory regime for plastic pollution is inadequate, given its minimal impact, fragmentation and inability to address the lifecycle of plastics on land and in the seas. The paucity of binding agreements creates the conditions where sovereign states are responsible for charting their own way forward and determining to what extent they will act to address plastic pollution.

## Equity Recognition: Ongoing Displacement of Plastic Waste through the Global Waste Trade

By Dr. Solène Guggisberg

**Background:** With plastic production expected to double within the next 20 years (Lebreton & Andrady, 2019), global municipal plastic waste generation projected to triple by 2060 (v. 2015 values) (Jambeck et al. 2015), and no comprehensive and efficient solution in sight (Raubenheimer et al. 2017), the marine plastic pollution issue is very likely to worsen. Tackling this crisis is high on the stated agendas of governments, but legally binding commitments at the global level are much rarer.

**Challenge:** When it comes to land-based sources of marine pollution, one reason for the lack of relevant binding international rules is likely the sensitive nature of territorial state sovereignty, as evidenced by the inadequate regime created under the law of the sea. In the last couple of years, however, one avenue that has been followed to address the global plastic waste crisis, which is a large contributor to marine debris, has been trade restrictions to shipments of plastic.

**Approach to Equity:** With the focus of this case on international law, social equity is mainly understood as fairness between the Global North and the Global South (divided here along the lines of OECD and non-OECD countries) and between countries, but also includes just treatment between groups within a same country when relevant to the discussion.

### Findings:

#### 1) *Scope of Application*

The Regime on the Control of Transboundary Movements of Hazardous Waste and their Disposal created by the Basel Convention is the first global set of binding rules that have the potential to reduce marine plastic pollution. The 2019 amendment related to plastics was promoted with the argument

that it would lead to “less marine plastic litter” (Green, 2018). One of this Convention’s main strengths is that, with 188 parties, it is widely ratified. It is also indirectly applicable to non-parties through the prohibition to trade with non-parties. Its multilateral nature means that there are less risks of re-routing waste to vulnerable countries than there would be with unilateral bans—as witnessed in practice following China’s 2017 import ban. This regime certainly has the potential to decrease the trade in plastic waste, in particular in difficult to recycle plastics, and hence hopefully reduce the amounts of waste dumped or otherwise mismanaged, which could enter the oceans.

However, the regime has some major shortcomings. First, some loopholes threaten the strengths highlighted above. The Basel Convention in particular is not universal, with one of the remaining outsiders being the United States. While the prohibition of trade with non-parties somewhat limits this weakness, the possibility to enter into bilateral agreements with non-parties and hence to trade hazardous and other waste with them nonetheless is a big loophole, in particular since their consistency with the multilateral system is not formally reviewed. An example of such a problematic agreement is the 2020 instrument between the United States and Canada,<sup>1</sup> which is non-binding, seems not to provide equivalent levels of controls to the requirements of the Basel Convention, and is silent vis-à-vis re-exports.

<sup>1</sup> Arrangement Between the Government of The United States of America and the Government of Canada Concerning the Environmentally Sound Management of Non-Hazardous Waste and Scrap Subject to Transboundary Movement (signed 22 and 26 October 2020), <https://www.canada.ca/en/environment-climate-change/services/managing-reducing-waste/international-commitments/canada-us-arrangement/arrangement-non-hazardous-waste-and-scrap.html>.

Another limitation to the regime's effectiveness in addressing marine plastic litter is that the Basel Convention only focuses on international trade. Since it is not intended to deal with internal waste trade and/or management, it will have little to no impact on the potential issues that arise within one country. For example, dumping of waste in the poorer areas of a country, against all social equity principles, cannot be addressed by this treaty. The EU Waste Shipment Regulation worsens this limitation. In a manner which, arguably, contravenes the EU member States' obligations under the Basel Convention, this piece of legislation provides for less stringent rules for trade within the European Union than what is required beyond the block's borders.

## ***2) Implementation and enforcement***

Issues of implementation and enforcement abound, underlined by problems of capacity and insufficient support and technology transfer towards developing States (Widawsky, 2020). Implementation is hindered by the difficulties linked to the determination of which waste falls into which category, due to the inherent complexity of the regime, its lack of important definitions, and discrepancies between the lists of hazardous waste adopted under the Basel Convention and those adopted by States or groups of States. The OECD Decision on the Control of Transboundary Movements of Wastes Destined for Recovery Operations<sup>2</sup> is a prime example of this last problem. When it came to expanding the application of the Decision to plastics, following the 2019 Basel Convention amendment thereabout, OECD members could only agree on incorporating the amendments to the hazardous waste list, but not to "other wastes".<sup>3</sup> This contributed to legal uncertainty, which often serves to lower standards and to create loopholes for illegal trade.

<sup>2</sup> OECD, Decision of the Council on the Control of Transboundary Movements of Wastes Destined for Recovery Operations (adopted 30 March 1992, last amended 1 January 2021) OECD/LEGAL/0266 (OECD Decision).

<sup>3</sup> "Modified Appendix to the OECD legal instrument on the transboundary movement of plastic waste", <https://www.oecd.org/environment/waste/appendix-modifications.pdf>; OECD, "Full summary of the amendments to the OECD Decision", [https://www.oecd.org/environment/waste/Full\\_summary\\_of\\_the\\_amendments\\_to\\_the\\_OECD\\_Council\\_Decision.pdf](https://www.oecd.org/environment/waste/Full_summary_of_the_amendments_to_the_OECD_Council_Decision.pdf).

Moreover, the implementation of some key procedures under the Basel Convention, in particular the prior informed consent one, which applies to a large proportion of trade in plastic wastes, can prove challenging (Krueger, 1998). For example, the potential lack of technical and administrative capacity in an importing country to actually assess whether a facility can handle specific waste in an environmentally sound manner, the reality that developing states might need the foreign currency that comes with waste imports, or the actions of corrupted officials have contributed to environmental disasters due to waste import and mismanagement (Krueger, 1998). These complexities of the Prior Informed Consent (PIC) procedure are avoided for trade in hazardous waste between most OECD and non-OECD countries since the Ban Amendment stops all such trade (Waugh, 1999). The PIC procedure can also be avoided if exporting or importing states decide to apply higher restrictions to "other" wastes, such as toxic or hard to recycle plastic waste under the EU Waste Shipment Regulation.<sup>4</sup>

When it comes to enforcement, unfortunately, the illegal traffic in waste and waste crime more generally are widespread (Khan, 2020). They take many forms, such as false declarations of content or dumping of waste intended for recycling into landfills. To respond to these issues, many initiatives within the Basel Convention framework, such as the Environmental Network for Optimizing Regulatory Compliance on Illegal Traffic (ENFORCE), aim at improving capacity in States that particularly need it. International supervision of states parties' actions would also be a positive step, but, at present, the Basel Convention's Mechanism for Promoting Implementation and Compliance is not functioning properly (Widawsky, 2020), nor does it have teeth to address intentional non-compliance (Andrews, 2009).

<sup>4</sup> WSR, article 36 and annex V, more specifically, for plastics Part 1 List A (A3210) and Part 3 (Y48).

**Equity Implications:** All in all, even taking into account its limitations, the Basel Convention regime has a strong potential to reduce mismanaged plastic waste leaking into the oceans and to contribute to social equity between states by reducing the practice of rich countries using developing states as dumping ground under the pretense of mutually beneficial trade in waste products. In particular, states from which plastic waste originates might have to rethink their waste management infrastructure (Khan, 2020) and improve their recycling facilities (Simon, 2021). If plastic recycling continues to face the major challenges it has so far, and if that leads to stock-piling of waste domestically, domestic pressure for more fundamental changes might also grow. Hence, beyond the direct impacts on the quantity of mismanaged plastic waste, the Basel Convention might nudge the international community towards re-thinking the whole life-cycle of plastics, from design to disposal.

## Inequity Within Coordination

### The Balloon Effect of Uncoordinated Plastic Production Restrictions

By Dr. Elizabeth Mendenhall

**Background:** The contemporary international system is comprised of sovereign territorial states whose governments have exclusive and ultimate authority over their people and territory. Borders between states represent a transition between zones of jurisdiction, such that private actors find themselves subject to different rules depending on where and who they are. The resulting patchwork of legislation and regulation creates an uneven regulatory landscape, which can make it difficult to solve shared international problems, especially those concerning the global environment. Historically, states wishing to collectively address shared problems will institutionalize their cooperation and coordination using international treaties and other instruments. These instruments not only raise the bar for domestic legal systems, they also generate a degree of regulatory uniformity across territories and national economies, such that private actors are more likely to confront the same types of rules in different places. Because the globalized economy makes it easy for multinational corporations to export, outsource, and relocate, regulatory uniformity—in terms of both formal commitments and practical enforcement—is critical to actually shaping their behavior in position direction.

International law regulating plastic production, consumption, and disposal is somewhat limited, and generally much more developed with respect to sea-based plastic pollution (Tanaka 2015). In contrast, land-based pollution is regulated through the very general obligations contained in Part XII of the United Nations Convention on the Law of the Sea, and more specific treaties on the transboundary waste trade and particular toxic additives. Regulation of sea-based plastic pollution is stronger, more uniformly domesticated, and more effective. This difference is explained in part by the incentives of the shipping industry to create a level playing

field to ensure that competitors do not have cost advantages, and that ships can easily navigate through diverse jurisdictions. In contrast, plastics industries on land—including companies involved in production, distribution, and disposal—benefit from a regulatory patchwork, which allows them to shift their activities to more favorable jurisdictions and shift their resources to influence smaller and weaker governments.

**Findings:** The plastics industry includes a variety of types of companies, from the producers of plastic feedstock to manufacturers and retailers, including some of the most powerful corporations in the world. As individual states, and even local and provincial levels of government, take action to increase restrictions on plastics, the increased differences between regulatory jurisdictions incentivizes the companies that produce plastic and sell plastic products and packaging to shift their operations to more favorable jurisdictions. Examples include the major twentieth century shift of plastics production from the West (North America and Europe) to East Asia, and the growth of food and beauty products sold in single-use sachets in the developing world while the same companies alter their packaging to meet stricter regulations in the European market (Letcher 2020). This phenomenon can be described as “balloon effects,” a term which has been used to describe the shifting patterns of illegal or illicit activities in other areas (Blasiak 2015; Davalos and Morales 2019). In short, when plastic production and consumption is mobile, tightening restrictions in one area prompts a shift to more favorable jurisdictions. As Peter Dauvergne, international relations scholar and author of *Will Big Business Destroy our Planet?*, describes it, “An ever-more powerful plastics industry is navigating this uneven governance terrain to avoid any oversight or accountability” (Dauvergne 2018, 29).



**Equity Implications:** While equity issues are typically portrayed as occurring between individuals or communities, equity also needs to be evaluated in the relationships between states in the international system. Although all sovereign states have “sovereign equality” (they are equally sovereign, get one vote in the United Nations General Assembly, and have the right to establish diplomatic relations with one another), power and capacity asymmetries often lead to uneven and inequitable outcomes when it comes to major shifts in the global economy. The “balloon effects” phenomenon means that equitable responses to marine plastic pollution will require attentiveness to how the plastics industry responds to new restrictions on production and sales. Assessments of the effectiveness of national, sub-national, or regional policy changes must look beyond the borders in which the policy applies to determine whether, where, and how the desired impact is achieved. Additionally, avoiding inequitable outcomes—where the negative impacts of plastics simply shift to weaker jurisdictions – will require substantial cooperative efforts to (1) create a uniform regulatory landscape for plastics, and (2) build capacity and transfer technology to weaker states to ensure adequate oversight and enforcement of new policies.

## Coordination

### Key Actions

#### **Stop the Ongoing Displacement of Plastic Waste Through the Global Waste Trade**

Despite the Basel Convention, waste continues to flow from high income to low income nations, perpetuating unequal plastic waste burdens.

#### **Address Balloon Effects of Uncoordinated Plastic Production Restrictions**

Plastic production restriction in one country have resulted in focused efforts by industry to increase production in country's that may not have the capacity to regulate production.

Fragmented regulations thus produce "balloon effects," where squeezing out plastics production in one country leads to the inflation of production in others



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# Conclusion

## Conclusion

### Moving Towards Addressing Equitable Marine Plastic Pollution Governance

Marine plastic pollution (MPP) is not a problem that can be solved solely through improved waste management and behavior change of the public. As we have demonstrated through this report, MPP is a clear equity issue that requires governance actions that account for the inequities that stem from MPP and its governance. Powerful industry actors influencing policy decisions and shaping environmental norms and values around plastics and plastic waste are in large part responsible for perpetuating these inequities. At the same time, the ongoing political exclusion of marginalized groups and non-Western knowledge systems will inevitably sustain inequitable governance actions. The inequities that stem from MPP and the uneven power relations that drive inefficient and uncoordinated governance approaches need to be addressed if equitable and long-term solutions are to be achieved.

#### Across our Emergence of Inequity themes, strategic actions must be taken:

##### Responsibility

- Governance actions need to focus on the root cause of this problem—the overproduction of wasteful and toxic plastics—rather than directing efforts disproportionately towards symptom-targeted solutions.
- This requires meaningful industry responsibility and accountability, as well as greater scrutiny of the power that industry has had in pushing business-as-usual governance agendas, which has created responsibility scapegoats and shaped environmental norms of individual responsibility.

##### Knowledge

- While the power of big business in shaping plastic governance agenda needs to be scrutinized and restricted, non-Western and Indigenous knowledge systems need to be acknowledged and meaningfully included into decision-making processes.
- Inclusion of non-Western and Indigenous knowledge systems into the development of governance actions is a necessary step to the design and implementation of equitable MPP governance actions. It is critical that the political inclusion of non-Western and Indigenous voices ensures that they are not only present in the conversation, but also hold power.

##### Well-Being

- Research on the impacts of MPP on humans needs to acknowledge that they are diverse and complex, and research focuses must expand beyond physical health and economic impacts.
- A well-being approach to impact assessments can help contextualize the inequitable burdens of MPP, providing valuable insights on the realities of plastic waste burdens that can shape local plastic use and waste management policies.

##### Coordination

- Patchwork and fragmented policies are unfit to address the growing plastic problem and will allow ongoing exploitations.
- The plastics problem is global and requires governance actions that match the scale of the problem. This includes enforcing stricter regulations specifically on industry on a global scale to combat the overproduction of plastics.

## Next Steps

If we fail to address these inequities, marine plastic pollution will persist as a global problem. We will continue to witness the exploitation of people and land burdened with the impacts of plastic production, plastic waste management, and plastic leakage.

This report is part one of Ocean Nexus' published efforts to address the inequities of marine plastic pollution. In this report, we have examined the complex realities of marine plastic pollution, emphasizing how this issue is one of equity. In our forthcoming "Marine Plastic Pollution Roadmap" we present a ten-year governance action plan collectively produced by a diverse group of marine plastic pollution experts that outlines four primary aims of governance action for equitable outcomes: 1) Establishing corporate accountability and responsibility of Equitable Outcomes, 2) Crafting a strong international treaty that is equitable and enforceable, 3) Determining clear definitions as the basis for regulation and education, and 4) Capacity-building for stronger representation of actors most affected by marine plastic pollution. The goal of this roadmap is to present actionable items and policy development guidance, bridging insights developed through academic research with policy. Our aim is to produce open-access, strategic materials that will contribute towards achieving a just and equitable zero waste future.

### Box 5. **Plastics Are the Visible Arm of the Wider "Invisible" Ocean Pollutant**

By Elsie M. Sunderland

Plastics is a critical issue that needs to be addressed. However, we should not overlook the severe ecological and human health effects associated with diverse chemicals released by human activity to the atmosphere and rivers that have accumulated in global marine systems. Many of these chemicals such as **methylmercury, organochlorines, and legacy per-and polyfluoroalkyl** substances accumulate in marine food webs. Exposures to these chemicals are associated with the **global pandemic of neurocognitive deficits in children, rapid increases in immune and metabolic disorders, and impaired cardiovascular health** among many populations. Conflating ocean pollutants and plastics as singular issue has led to many of the threats associated with "invisible" ocean pollution being understudied or ignored. We need to continue to work towards eliminating wasteful and toxic plastics, at the same time recognizing that marine plastic pollution is situated within a broader issue of ocean pollution produced through the unregulated production of chemicals. We intend to expand upon this work and continue to address how equity issues emerge across wider ocean pollutants.

Table 2. **Summary of Key Actions**

<b>Responsibility</b>	<b>Refocus Responsibility Onto the Root Cause of the Problem: Plastic Production</b>	<p>Industry has shaped the discourse defining the plastics crisis as an individualized problem, deflecting attention away from the responsibilities of industry while also distracting from the structural inequalities of plastic waste burdens.</p> <p>End-of-life approaches are symptom-focused, deflecting attention away from the root cause of the plastics crisis—the production of toxic and wasteful plastics.</p>
	<b>Recognize Industry Creates Responsibility “Scapegoats” to Deflect Blame</b>	<p>Taking control of the plastics waste narrative dampens criticism of big business and shifts blame from industry onto less powerful actors outside their supply chains, creating “scapegoats” for the plastics crisis.</p> <p>Responsibility “scapegoats” serve as distractions from the continuing efforts of big business to avoid responsibilities or derail regulatory actions.</p>
<b>Knowledge</b>	<b>Limit Industry Influence Over Knowledge Production and Plastics Discourse</b>	<p>Powerful industry groups have shaped the dominant discourse defining the plastics crisis as an individualized problem, deflecting attention away from the responsibilities of plastics producers and manufacturers as the biggest polluters and those with the most power to make the most change at source, while also distracting attention away from the structural inequalities of plastic waste burdens.</p>
	<b>Recognize and Value Indigenous Knowledge Systems in Governance and Management</b>	<p>The exclusion of Indigenous knowledge systems from the dominant discourses on plastic waste governance has led to socio-environmental injustices that perpetuate harmful colonial and capitalist ideologies and agendas.</p>
<b>Well-Being</b>	<b>Prioritize Community Voices in Understanding Impacts of Marine Plastic Pollution</b>	<p>A well-being approach recognizes that human health is more than the absence of disease and includes environmental, social, biological, psychological, economic, and political attributes.</p> <p>A well-being approach is critical to understanding the range of direct and indirect impacts that stem from marine plastic pollution.</p>
	<b>Acknowledge That There is a Diversity of Voices, Values and Needs</b>	<p>A well-being approach contributes to more equitable modes of impact assessment that acknowledges the diversity of needs and values that occur across different communities.</p> <p>A well-being approach recognizes diversity as critical to avoiding further marginalization related to race, age, class, citizenship, gender and other factors.</p>
<b>Coordination</b>	<b>Stop the Ongoing Displacement of Plastic Waste Through the Global Waste Trade</b>	<p>Despite the Basel Convention, waste continues to flow from high income to low income nations perpetuating unequal plastic waste burdens.</p>
	<b>Address Balloon Effects of Uncoordinated Plastic Production Restrictions</b>	<p>Plastic production restrictions in one country have resulted in focused efforts by industry to increase production in country’s that may not have the capacity to regulate production.</p> <p>Fragmented regulations thus produce “balloon effects” where squeezing out plastics production in one country leads to the inflation of production in others.</p>

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