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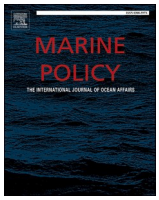

Competing axes of power in the global plastics treaty: Understanding the politics of progress and setbacks in negotiating a high-ambition agreement

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ABSTRACT

Headlines in December 2024 proclaimed the "collapse" and "failure" of United Nations plastics treaty negotiations in Busan, South Korea. This is, however, an overly simplistic and pessimistic portrayal. Progress on less contentious issues was made, and the meeting was adjourned with a commitment to continue negotiating in 2025 on the basis of the "Chair's text." Significantly, at the closing plenary, a majority of states voiced support for a "high-ambition" treaty covering the full life cycle of plastics, drawing clear red lines on the necessity of legally binding measures to phase out hazardous plastics, regulate chemicals in plastics, and finance just transitions. Delegates from developing countries such as Rwanda, Panama, and Mexico were especially steadfast in demanding an "ambitious" treaty to end plastic pollution, including in marine ecosystems. Yet there were also setbacks, as multiple, intersecting axes of pro-plastics power – comprising loose alliances of petrostates and business interests profiting from rising plastics production – sought to thwart high-ambition obligations. Industry actors lobbied against stringent commitments and endeavored to narrow the treaty's scope to downstream waste management. Petrostates such as Russia and Saudi Arabia, meanwhile, stalled discussions and bracketed high-ambition text. Divisions between developing and developed countries also emerged over the appropriate financing mechanism. Despite this turbulence, achieving a strong treaty remains possible. But this will require strengthening the high-ambition axis of power, enhancing transparency and accountability, and ensuring the meaningful inclusion of rights holders, local communities, and civil society.

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1. Introduction

In 2022, the United Nations Environment Assembly (UNEA) mandated member states to negotiate by the end of 2024 a legally-binding treaty to govern the life cycle of plastics, with the aim of ending plastic pollution, "including in the marine environment" [68]. States did not meet this deadline. No agreement was reached at the fifth Intergovernmental Negotiating Committee (INC-5) meeting – held in Busan, South Korea, from November 25 to December 1, 2024 – and talks were adjourned until 2025. Inger Andersen, the Executive Director of the UN Environment Programme, put a positive spin on the outcome.

> This week's meeting has made good progress towards securing the deal the world demands. … Through the Busan talks, negotiators have reached a greater degree of convergence on the structure and elements of the treaty text, as well as a better understanding of country positions and shared challenges [66].

This article brings together 19 scholars with expertise in the politics of plastics governance to evaluate the outcome of the Busan talks (9 of whom attended in person). Some progress, we agree, was made. Delegates from 170 states and the European Union resolved to keep negotiating on the basis of a "Chair's draft" [69]. Although this draft remains bracketed in its entirety, meaning it is still fully open for discussion, it is less unwieldy and replete with gaps and brackets than the text arising from INC-4 in Ottawa, Canada, in April, 2024 (which contained thousands of brackets).

More importantly, we argue, the Busan INC demonstrated the commitment and determination of the majority of states to negotiate a strong treaty with mandatory, stringent obligations. Developing countries with high vulnerability to the harms of plastic pollution (so-called "vulnerable developing countries") were especially vocal and steadfast in supporting a "high-ambition" treaty with clear targets, timelines, and adequate financing to end plastic pollution. At the closing plenary, Mexico (on behalf of 94 countries) called for a "legally binding obligation to phase out the most harmful plastic products and chemicals of concern in plastics" [42]. During this same plenary, Rwanda (on behalf of 84 countries) called for binding commitments across the entire life cycle of plastics to meet "a global target to reduce the production of primary plastic polymers," "phase out the most harmful plastic products and chemicals of concern in plastics," and "provide ambitious and effective means of implementation" for developing countries [52]. These states were more cohesive, resolute, and clear on their red lines than during any previous negotiating session (participants' observations), marking a potential turning point toward a robust, meaningful treaty. Lisa Bellanger of the International Indigenous Peoples' Forum on Plastics captured well the sentiment of people living in these countries: "A weak treaty is a failed treaty" [10].

Considering the pervasiveness and prominence of plastics within the world economy, the 2-year timeline for negotiating a treaty spanning the full life cycle of plastics – from oil and gas extraction to petrochemical production to plastics manufacturing to product usage to waste management – was exceptionally ambitious. Past international environmental negotiations of comparable complexity and political stakes have taken far longer [11]. "The plastics treaty deadline was super, super short," notes Maria Ivanova of Northeastern University. "I know of no other treaty that only had 2 years to finish negotiations" (quoted in [12]). Going into Busan, few analysts, including the authors of this article, expected a strong treaty to be adopted, especially given some fundamental issues, such as the scope of the treaty, were still unresolved. Indeed, the Busan adjournment was likely, and describing the talks as "failed" or "collapsed" underestimates the progress, and risks overlooking the significance of the majority of states demanding a high-ambition treaty.

Still, advocates of high ambition did experience setbacks in Busan. To defend their interests, multiple, intersecting axes of pro-plastics power – comprising loose alliances of states, corporations, financial institutions, and other private actors profiting from rising plastics production – obstructed, delayed, and sidetracked negotiations. One axis of business interests aligned to oppose any curbs on plastics production or consumption. Lobbyists for the oil and gas, petrochemical, and plastics industries were present in force in Busan, and actively drew from the "climate playbook" to thwart, narrow, or weaken measures to regulate chemicals of concern, eliminate hazardous plastics, or cap global plastics production ([34,53]; participants' observations). Another attendant axis of plastics power – comprising authoritarian petrostates such as Russia, Saudi Arabia, and Iran – demanded a consensus decision-making process, which has proven highly problematic when geopolitics dominates multilateral environmental negotiations (e.g., climate Conferences of the Parties and the Commission for the Conservation of Antarctic Marine Living Resources).

As per the climate playbook, at every opportunity these petrostates bloated the draft text, contested definitions and principles, shared misleading information, cherrypicked references to 'science', and bracketed high-ambition text (participants' observations). Petrochemicals are a fast-rising source of global demand for oil and natural gas [76]. Going forward, these industries and petrostates will likely continue to impede negotiations and advocate for financial mechanisms that minimize petrostate responsibility and maximize opportunities for future profit-making. They are also going to work to narrow the treaty's scope from the life cycle of plastics to the downstream management of waste, as has been the case since INC-1 in Punta del Esta, Uruguay, in 2022 [29]. Kuwait made this clear at the closing plenary of the Busan talks, speaking on behalf of the so-called "like-minded" group that formed at INC-3 – a group whose full membership is unclear but includes countries such as Bahrain, Egypt, Kazakhstan, Kuwait, Russia, and Saudi Arabia. "We reiterate that the objective of this treaty is to end plastic pollution – not plastic itself" ([63], Part 4, at 1:27:57).

As negotiations stalled, INC Chair Luis Vayas Valdivieso of Ecuador shifted proceedings to "Contact Groups" behind closed doors. This decision submerged deliberations into informal, opaque spaces of decision-making, contradicting what many consider best democratic participatory practices for multilateral environmental negotiations. Here, industry representatives on state delegations continued to wield considerable influence, as did vocal petrostate representatives. The shift to closed-door meetings not only limited the access to technical expertise for smaller delegations, but also sidelined Indigenous peoples and other rights holders, independent scientists, and civil society representatives. "We have been silenced and strategically undervalued," a frustrated delegate with the International Indigenous Peoples' Forum on Plastics told a press conference on the penultimate day of negotiations. "How can you talk about a just transition, when we are not given a space at the table?" [27].

The next section explains our positionality and methodology. The following three sections then examine the clashing forces of high and low ambition in Busan, aiming to identify key lessons for realizing a high-ambition global plastics treaty.

2. Positionality and methodology

The authors of this article are specialists in global governance, environmental politics, and the environmental sciences who are deeply concerned about the declining health of ecosystems. Our disciplinary training spans political science, international law, international relations, economics, sociology, social anthropology, ocean governance, ecotoxicology, and zoophysiology, among others. Many of us have experience covering multilateral environmental negotiations.

All of us accept the scientific evidence that plastic pollution is an escalating global ecological and health crisis, and we agree on the value of a strong and effective plastics treaty. None of us has any conflicts of interest when evaluating this evidence. Many of us focus on the role of the global political economy in driving this crisis, and how unequal power relations are disproportionately exposing vulnerable peoples and

ecosystems to chemical contamination and plastic pollution.

Our analysis and data collection for this article rely on a mixture of methods. We drew upon our collective knowledge of policy documents, advocacy materials, and scientific publications on plastics. This included sharing and comparing our findings in recent and forthcoming peer-reviewed articles. Additionally, during the Busan talks, we consulted the summaries of proceedings by the Earth Negotiations Bulletin (e.g., [27]), and watched and re-watched plenary speeches on UN Web TV to confirm quotations and observations (e.g., [62,63]).

Some of us gained further insights as members of civil society or scientific organizations at the negotiations, such as the Scientists' Coalition for an Effective Plastics Treaty.[1] Others acted as "event ethnographers," taking detailed, methodical notes on the statements, government negotiators, industry lobbyists, and civil society observers (e.g., gender of speakers, content and length of interventions, regional representation, nongovernmental and governmental participation rates, and reactions of audiences) [18,40]. Many of us shared observations to increase coverage and validate findings. During the Busan talks, for instance, every morning those in the Scientists' Coalition compared notes and agreed upon a "response document" to the latest version of the Chair's text. For simplicity, in this article we describe our collective participatory and ethnographic observations during plastics treaty negotiations as "participants' observations." We reconciled differences in interpretation of written statements, official documents, and negotiation observations through shared online drafts.

Our methodology has limitations. There are potential biases arising from our collective support for a legally-binding treaty anchored in scientific evidence, a precautionary approach, justice and equity, and strong governance of the life cycle of plastics. All of the coauthors are also affiliated with research institutions in developed countries. Notably, too, we were not privy to formal closed-door sessions or informal behind-the-scenes discussions among negotiators and lobbyists. Future research on the politics of the plastics treaty negotiations would benefit from confidential interviews to deepen the understanding of closed-door and corridor discussions. Including more researchers from developing countries would be valuable, too.

3. Axes of power in the plastics treaty talks

Two main axes of powerful pro-plastic political coalitions – one anchored in petrostates and the other more broadly in industry interests – have been working to stall and undermine negotiations for a strong plastics treaty. These two axes operate in ways that serve their specific interests: namely, retaining or expanding the economic and political power of petrostates, and sustaining or increasing profits along the global supply chains of petrochemical plastics. But these axes also intersect in multiple ways that reinforce their shared interests in delaying or weakening a plastics treaty. A competing axis of power, of high ambition actors working toward a strong plastics treaty, has been gaining strength as political support, public awareness, and scientific understanding increase. So far, however, because of their capacity to lobby governments, frame narratives, and influence multistakeholder forums, the petrostate and industry axes have been able to stall and derail progress by the high-ambition axis.

One reason is the nature, extent, and depth of economic influence of the global plastics industry. This industry involves long and complex supply chains, with links into every country. Around 98 % of plastics derive from petrochemical feedstock sourced from crude oil and natural gas. Upstream extraction and production involve well-known transnational corporations – such as ExxonMobil, Shell, and Dow – but there are also deep layers of state-owned enterprises, medium-sized companies, and small firms involved [25,37,38]. These upstream and midstream interests have combined to drive up plastics production at a striking rate. Global production has more than doubled since 2000, with more plastics manufactured since 2010 than in the entire preceding history (updated from [20]).

This production is geographically dispersed. In 2023, China accounted for one-third of global plastics production, with installed capacity rising quickly since 2020 [7]. That year, the rest of Asia produced 22.5 %, while North America accounted for 17.1 %, Europe for 12.3 %, the Middle East and Africa for 8.5 %, Central and South America for 3.8 %, and the Commonwealth of Independent States in Eurasia for 2.5 % [47]. The downstream supply chains of plastics are even more fragmented and geographically dispersed. Global retailers and brand manufacturers – such as Coca Cola, Unilever, and Procter & Gamble – are key players. But every country imports and consumes large quantities of plastics – especially single-use plastics, which comprise approximately half of global production [6]. Every country is also retailing consumer products that release microplastics (less than 5 millimeters in size) and nanoplastics (less than 1000 nanometers in size) directly into the environment, such as tires, paint, and clothing (e.g., nylon/polyester) [21,29,74].

As a result of the fragmented and dispersed character of the global plastics industry, axes of pro-plastics power cut across economies, political systems, and geographies, both vertically and horizontally. These axes comprise aligned petrostates, oil and gas companies, chemical producers, and plastics manufacturers seeking to shape discourse, limit strong regulation, and retain or increase production output [25,49,50]. Industry associations, consultancy firms, banks and investors, and certain international institutions and nongovernmental organizations (NGOs) are reinforcing and amplifying the messaging and influence of axes of pro-plastics power [25].

Each axis extends deeply into local political economies. This reach includes manufacturing products (agriculture, automotive, construction, electronics, household, textiles), trading goods (wrapping, packaging, transporting), retailing products (single-use containers, bags, and bottles), and managing waste (collection, incineration, landfilling) [25,37,38]. Businesses everywhere are profiting from large quantities of readily available, inexpensive plastics that externalize the environmental and social costs of pollution [19,36–38]. This externalization of costs helps explain why, as Inger Andersen said in a speech in 2025, plastic pollution remains on track to increase by 50 % by 2040 [5].

These deeply-rooted, reinforcing axes of pro-plastics power help explain setbacks in treaty negotiations. Yet, as we discuss next, a competing axis of power is gaining strength and pressing for a strong, high-ambition treaty.

4. Forces of high ambition

We would not be in the midst of negotiations for a plastics treaty without the influence of the high-ambition actors. The proliferation of scientific research and the contributions of independent experts on nongovernmental bodies such as the Scientists' Coalition for an Effective Plastics Treaty are key reasons why so many states are supporting an ambitious treaty with a strong precautionary approach. Scientific evidence of an escalating global crisis is mounting. Already, at least 20 million tonnes of plastics are flowing into terrestrial and aquatic ecosystems every year, and this is on track to escalate quickly over the coming decades (OECD 2024, p. 11). These plastics are breaking down into smaller pieces, creating multiple hazards, including in all marine ecosystems [1,35,73]. They contain and can release hazardous

[1] Four of the authors were elected to leadership roles in the Scientists' Coalition for an Effective Plastics Treaty for the 2024–25 term. Trisia Farrelly was the Coordinator, on the Steering Committee, and Lead for the 2025 Science-Policy Interface Working Group. Bethanie Carney Almroth was the Co-Coordinator and on the Steering Committee. Natalia de Miranda Grilli was on the Steering Committee and Co-Lead for the 2025 Priority Area Working Group on Financial [Resources and] Mechanism. Patricia Villarrubia-Gómez was on the Steering Committee. Positions in the Scientists' Coalition do not provide any financial compensation.

chemicals and, as numerous scientific studies have now documented, microplastics and nanoplastics have been detected in every ecosystem, food chain, and human population, and are even impacting Earth system processes [29,74]. The health consequences are still not fully known, but the latest research is extremely worrying (e.g., [8,24,45,61,78]). The ecological and health burdens of plastics, moreover, are highly unequal, with low-income, frontline, fenceline, and Indigenous communities suffering disproportionate harms (e.g., [2,23,24,46,57]).

In developing countries, these disproportionate harms arise in part due to illegal dumping, leaching landfills, and the open burning of plastic garbage [22,23]. Frontline and fenceline communities in particular are suffering harm from exposure to chemicals and particles at extraction and production sites [26,39]. Solving this complex problem, large numbers of delegates and scientists in Busan agreed, is going to require going beyond the management of waste to reduce the amounts of plastic products and waste being produced, shipped across borders, and ending up in sensitive ecosystems [9]. Many delegates and observers argued in particular that it was vital to reduce the production of primary plastic polymers made from petrochemicals. The Pacific Small Island Developing States, for instance, called upon countries to commit to "the sustainable production of primary plastic polymers by achieving a global target of 40 per cent reduction by 2040, compared to 2025 levels" [48].

Panama's head delegate Juan Carlos Monterrey Gómez spoke ardently about the need to reduce primary plastics production, and pushed back against delegates who were arguing that this was outside the scope of the treaty. "For our colleagues that argue that production is not part of the mandate," he said in a plenary session, "let me correct the record: production is part of the full life cycle of plastics" ([62], Part 3, at 31:37). Over half (89) of the state delegations attending the Busan talks endorsed a proposal by Panama to reduce plastics production to "sustainable levels" [44]. From their perspective, merely redesigning some products and investing more in recycling and waste infrastructure will not suffice. This helps explain why support for a treaty addressing the full life cycle of plastics held strong throughout the Busan talks: the majority of states agree on the necessity of addressing the upstream causes of plastic pollution, and ensuring the treaty does not unfairly shift responsibility and burdens onto downstream communities and ecosystems.

Many other vulnerable developing countries, such as Rwanda, Kenya, Mexico, and Tuvalu, were equally vocal in their support for a high-ambition treaty. Concerns across these countries vary widely, including harms to terrestrial biodiversity, coastal ecosystems, marine life, freshwater quality, tourism, and public health (e.g., from open burning, leaching landfills, and illegal dumping). Mitigating such harms, delegates from these countries argued, is going to require a robust mechanism to provide fair and equitable public financing to meet treaty obligations in low-income countries. They emphasized, too, the need for grants and concessional financing that do not further increase the debt burden of developing countries. Some developing-country delegates called for a remediation fund, and others for a fee on primary plastic polymers to fund just transitions in heavily polluted communities. As in other recent multilateral environmental negotiations (e.g., biodiversity talks at COP-16 in Colombia in 2024), some of these delegates also urged restraint in relying upon private financing and market mechanisms, echoing concerns among many nongovernmental observers at Busan about the reliability, efficacy, and suitability of industry-preferred options like plastic credits, bonds, and offsetting (participants' observations; [43]).

At the closing plenary in Busan, Rwanda's lead negotiator Juliet Kabera, speaking on behalf of 84 countries, noted that a "small number of countries" were working to "remove binding provisions from the text that are indispensable for the treaty to be effective." She called for a "global target to reduce the production of primary plastic polymers to sustainable levels" and equitable and adequate financing for implementation and just transitions for communities in the most affected places. Most people in the room stood and applauded when she asked everyone who agreed to "stand up for ambition" ([63], Part 4, at 44:56; see also, [15]). Such a call broke protocol for a closing plenary, but signified the determination, strength, and unity of high-ambition states (participants' observations). Shortly afterward, Mexico's head of delegation Camila Zepeda, speaking on behalf of 94 countries, reiterated the necessity of "a clear, legally binding obligation to phase out the most harmful plastic products and chemicals of concern in plastics" ([63], Part 4, at 1:09:19; see also, [15]). Once again, large numbers of delegates and observers clapped.

Later in the closing plenary, Panama's head of delegation, Juan Carlos Monterrey, gave a rousing speech calling for a high-ambition treaty. A coalition of more than one hundred states "will never" accept a weak treaty, he declared. Going forward, this coalition "will continue to stand firm for ambition, demanding action on chemicals of concern, reduction in harmful plastic production, and the financial provisions necessary to support a fair transition in developing nations." He closed his speech with a warning to low-ambition petrostates and corporate interests.

> Panama leaves Busan with fire in our hearts. When we reconvene, the stakes will be higher, the devastation will be worse, and the opportunity to act will be even smaller. But Panama, and the more than one hundred nations that demand action, will return louder, stronger, and more determined than ever.

As with the statements by Rwanda and Mexico, large numbers of delegates and observers applauded enthusiastically at the end of Panama's statement ([63], Part 4, at 2:04:22).

5. Forces of low ambition

The value of plastics, plastic products, and plastic waste traded legally has more than doubled since 2004, nearing US$1.2 trillion by 2021 [64]. Single-use plastics are at the core of this profit-making [37,38]. To protect this industry, over the past two decades the oil and gas, petrochemical, and plastics industries have been lobbying governments, redefining discourses of circularity, and promoting multistakeholder initiatives to enhance their influence over emerging governance of plastics at every jurisdictional level [17,19,36–38,50,51,72]. Transnational corporations at the core of this lobbying effort include Dow, BASF, ExxonMobil, and SABIC. Industry associations playing key roles include the American Chemistry Council, PlasticsEurope, and the European Chemical Industry Council. In addition, multistakeholder initiatives, such as the Alliance to End Plastic Waste and the Global Plastic Action Partnership, have been established to advocate for a business-friendly approach to governing plastics [31,49].

At least 220 industry lobbyists registered to attend the Busan talks, more than even the host country of South Korea with 140 representatives. Dow had at least five; ExxonMobil at least four. An unknown number of industry representatives were also on state delegations [16]. The fossil fuel, chemical, and plastics industries, through multiple axes of power, endeavored throughout the negotiations to narrow the scope of the treaty to downstream waste management (participants' observations). "Plastics aren't the problem – plastic waste is," was a typical statement by ExxonMobil (quoted in [34]). At the same time, these industry representatives lobbied against binding obligations to address chemicals of concern, problematic plastics, and the overproduction of primary plastic polymers (participants' observations).

Two of the most powerful axes of pro-plastics power aligned throughout the Busan talks, as authoritarian petrostates – such as Russia, Iran, and Saudi Arabia – strove to advance the interests of the fossil fuel and chemical industries. Delay was a core strategy. Time and again, for instance, delegates from the like-minded group of states reopened discussions about the rules of procedure, blocked the setting of definitions and principles, and challenged the appropriateness of the Chair's text as a basis for negotiations (participants' observations). They routinely

challenged scientific evidence, with Saudi Arabia even going as far as questioning the value of taking a scientific perspective, arguing that the INC should not be "negotiating science" (participants' observations). Petrostate delegates inserted ambiguity and loopholes into the treaty draft. They called for voluntary commitments and market-based mechanisms to finance capacity building and implementation (participants' observations). They emphasized the value of plastics for jobs and economic prosperity, and the importance of focusing efforts on improving recycling rates, waste infrastructure, and waste removal technologies [33]. Additionally, they insisted on bracketing text addressing production and supply, chemicals of concern, and problematic plastic products (participants' observations).

At every turn, these petrostates also attempted to narrow the scope of the treaty from the full life cycle of plastics, as mandated by the 2022 UNEA resolution, to a "plastic waste treaty" (participants' observations). Saudi Arabia, along with other like-minded countries, argued repeatedly that extraction and production were out of the scope of the treaty, and this was a red line for them (participants' observations). Kuwait, speaking on behalf of the like-minded group at the closing plenary, reminded others that these countries "represent over 50 % of the world's population," although notably the speech and accompanying longer written statement did not list the countries in this group [33]. "Attempting to phase out plastic as a material," the Kuwait representative said, "rather than addressing the issue of plastic pollution, risks undermining global progress and exacerbating economic inequalities." He stressed the necessity of consensus and inclusivity, avoiding "unrealistic targets," and the importance of taking the time to negotiate a "practical and actionable" treaty. "Let us be unequivocal," the Kuwait representative said, "Rushing to impose decisions without hearing all voices undermines not only the trust in the treaty process but also the credibility of the United Nations Environment Programme as a whole" ([63], Part 4, at 1:27:57; see also, [33]).

Some petrostates during the Busan talks also opposed the inclusion of a standalone health article in the treaty. Saudi Arabia, for instance, called for the deletion of the placeholder health article in the Chair's draft, arguing "the inclusion of a health provision in this instrument will duplicate efforts within WHO and divert attention from the core objective we have at hand of addressing plastic pollution" [32]. Calling to avoid "duplication" with other international agreements and organizations is a common tactic to try to lower ambition during multilateral environmental negotiations. As with the health article, petrostates during the Busan talks similarly opposed trade and chemical regulation measures on these grounds (participants' observations). The World Health Organization, it is important to note, has called for the inclusion of health as a crosscutting theme in the plastics treaty, but also endorsed "a specific standalone health provision … to further strengthen or tailor health protections and safeguard public health" ([77], p. 8). States such as Brazil are also supporting a standalone health article in the plastics treaty, arguing this is necessary to bolster global cooperation and state capacity to protect human health, especially within marginalized populations [14,65].

6. Divisions over financing

The political dividing lines over financing differed from those for production, chemicals of concern, and problematic plastics. Here, the main divide was between "developing" and "developed" countries, as in climate and biodiversity negotiations. In Busan, two competing financing proposals emerged with very different structures and sources. The first proposal was championed by the African Group, the Group of Latin America and Caribbean Countries (GRULAC), and the Cook Islands, Fiji, and Micronesia and, by the end of the week, it had the support of over 120 countries (including Arab states) (participants' observations). These countries called for a new and dedicated fund embedded in the principle of Common but Differentiated Responsibilities, with concessional financing primarily from public sources, and with assistance flowing from developed to developing countries [3].

The United Kingdom, the United States, the European Union, Australia, Canada, Iceland, Japan, New Zealand, Norway, South Korea, and Switzerland championed the main competing proposal for financing the treaty. This grouping called for countries to contribute according to their capabilities, draw on blended public/private financing, and use an existing fund such as the Global Environment Facility [71]. These arguments were well-rehearsed at the Baku Climate Change Conference immediately prior to INC-5 (participants' observations). Meanwhile, the United Nations Environment Programme Finance Initiative backed calls to leverage private financing [67], as did the Business Coalition for a Global Plastics Treaty, the Alliance to End Plastic Waste, the Global Plastic Action Partnership, and the World Economic Forum. The latter actors in particular framed investments in plastic waste infrastructure, and risky technologies such as chemical recycling, as a multibillion-dollar "investible" opportunity, despite little evidence of interest in or support for private finance (participants' observations). Article 11 of the Chair's text reflects a mix of these two proposals [65], although, given the extensive bracketing within this Article, and given that the Chair's text as a whole is effectively bracketed, "nothing is agreed until everything is agreed," as the common negotiation adage goes.

In this context, the Business Coalition for a Global Plastics Treaty – representing financial institutions, brand manufacturers and retailers, and some local producers and waste management firms across global plastics supply chains – called for "extended producer responsibility" (EPR) to reduce plastic waste and pollution. Importantly, the Business Coalition understood this as meaning the creation of market-mechanisms, such as "bonds" and "plastic credits," to "unlock" investment opportunities in plastic waste (participants' observations). The Business Coalition sought to differentiate itself from the positions of the fossil fuel and petrochemical industries. In sessions at the margins of treaty talks, for instance, the Business Coalition backed variable fees to incentivize new designs and to reward firms for using recyclable and reusable plastic products (participants' observations). This stance reflects a preference for harmonized minimum standards on EPR, motivated by an interest in lessening reputational risks, protecting brand value, and addressing consumer backlash in some countries to recycling fees and other plastics governance measures.

7. Exclusion, marginalization, and procedural injustices

Negotiating an effective and equitable plastics treaty is going to require procedural justice and transparency, as well as more meaningful inclusion of waste pickers, frontline and fenceline communities, youth groups, civil society organizations, and Indigenous peoples and other rights holders [20,55,57]. This will necessitate more logistical and financial support for participants from heavily-polluted, low-income communities. Meaningful inclusion will also require going beyond "formal access" to ensure "genuine influence" during talks ([59], p. 2). This is one of the areas where the Busan talks did fail. Throughout, logistical issues impeded the participation of these groups. Venues lacked sufficient seating for observers and the reliance on English for communicating outside of the plenaries limited the diversity of contributions (participants' observations). Scheduling for only a week of discussions was not conducive to procedural justice and consensus building. Chairs of the Contact Groups allowed petrostate representatives to sidetrack agendas and let discussions meander (participants' observations). Meanwhile, Indigenous peoples and other rights holders had only perfunctory opportunities to intervene.

In the final days, in the face of recalcitrant petrostates, and looking to break logjams on contentious issues, INC Chair Vayas shifted negotiations to informal sessions closed to observers. Past technical meetings and INCs for the plastics treaty had also shifted talks into closed sessions. Doing this in Busan was a further setback for the transparency and

accountability of the negotiating process. Civil society organizations and Indigenous peoples and other rights holders did continue to wield some influence through side events, press conferences, and bilateral meetings. But, with the fossil fuel and petrochemical industries represented on many state delegations, important voices of high ambition were silenced in these closed sessions, including independent scientists, nonprofits with expertise in plastics governance, community and youth groups, and Indigenous peoples and other rights holders. Independent scientists did continue to offer advice on versions of the Chair's text and on Conference Room Papers through email, text messaging, and informal conservations (participants' observations). These limited channels of communication, however, left smaller delegations with less access to this feedback (participants' observations). Time constraints further limited the input and participation of smaller delegations, with, for instance, many Conference Room Papers only available in English (participants' observations).

Industry is "in decision-making rooms with governments, making decisions about our future, about our children, while actively pushing us out," said Matt Peryman, a Kaupapa Māori researcher and coordinator of the Tāngata Whenua Coalition for an Effective Plastics Treaty. Speaking on day six of the Busan talks during a press conference by the International Indigenous Peoples' Forum on Plastics, Peryman added, "The total lack of transparency that we're seeing we're expected to be okay with? It's not ok, and we need to make sure that they understand that" (quoted in [28]). Sidelined, too, were NGOs with legal and technical expertise and valuable grassroots networks, such as the International Pollutants Elimination Network (IPEN), the Center for International Environmental Law (CIEL), the Global Alliance for Incinerator Alternatives (GAIA), Break Free From Plastic (BFFP), and the International Alliance of Waste Pickers (IAWP).

The orchestrated shift to closed sessions alienated and marginalized groups disproportionately experiencing the injustices of plastic pollution. Yet, if a treaty does come into force, these groups will be vital to its implementation. Achieving an effective, workable, and high-ambition treaty is going to require future negotiations to recognize the "outrage" of those excluded and disregarded during the Busan talks, correct course, and prioritize the principles of procedural and distributive justice and the rights of the most affected peoples.

8. Lessons going forward

"Our mandate has always been ambitious," INC Chair Vayas said shortly after the end of the Busan talks. "But ambition takes time to land. We have many of the elements that we need, and Busan has put us firmly on a pathway to success" (quoted in [66]). The plastics treaty is certainly not "firmly on a pathway to success." Yet the outcome of INC-5 in Busan does offer valuable insights into how to get on an ambitious pathway to end plastic pollution, including in marine ecosystems.

The good news is noteworthy. Scientific and political understandings of the causes and consequences of plastics have increased considerably since negotiations began in 2022. Every state now agrees on the goal of ending plastic pollution. Support for a high-ambition treaty, especially among vulnerable African, Latin American, Asian, and small island states, remained strong in Busan, even in the face of disruptions, delays, and the weaponization of decision-making procedures by the forces of low ambition. Arguably, the Busan talks have helped build momentum for a high-ambition treaty by heightening global awareness and signaling to communities and businesses the broad resolve to end plastic pollution.

Opposition to ambition from the intersecting axes of pro-plastics power will no doubt continue, and likely intensify, in future negotiations. High-ambition alliances will need to remain steadfast in insisting on a lifecycle approach to address the disproportionate responsibilities of upstream actors and the disproportionate environmental and health injustices of plastic pollution for disadvantaged populations, especially in low-income developing countries. Greater transparency around the backgrounds and conflicts of interest of participants will be necessary to track the influence of industry on state negotiating positions. The treaty will need to integrate key international legal principles to promote procedural and distributive justice, such as the rights of Indigenous peoples, the equity principle, the polluter pays principle, the precautionary principle, and free, prior, and informed consent. A scope article, absent from the Chair's text arising out of the Busan talks, is essential [65]. A clear and unambiguous scoping of the intent, reach, and applicability of the treaty is vital to reduce legal uncertainty and disputes, enhance credibility, and achieve intended objectives.

In addition, national action plans to implement the treaty will need clear measures, timelines, and targets to eliminate the health and environmental harms of primary plastic polymers, chemicals of concern, problematic plastic products, and microplastic pollution. This will require safe and sustainable product designs and transparency and traceability of chemicals across the entire life cycle of plastics [13]. The treaty will also need a robust scientific and technical body and a legitimate science-policy interface, perhaps building upon lessons from climate and ocean governance [30,54,58,60], and possibly complementing a science-policy body for chemicals and waste [4].

The treaty will also need a workable, equitable, and adequate financing mechanism. Granted, this will be exceptionally difficult, especially as the financial needs for issues such as climate change, biodiversity loss, and sustainable development continue to rise. At the same time, as is true for any treaty, to be effective the plastics treaty needs to be well designed, widely accepted, and consistently implemented. This will need to include recognizing, and perhaps reconciling with, the standards of organizations such as the World Health Organization, the World Trade Organization, and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal [41,75]. Critically, a concerted effort will also be necessary to prevent the illegal trade in plastic waste, even if the treaty does not address this directly [56].

A great deal of work lies ahead. Given the size of their economies and populations, getting China and India on board is absolutely essential for a globally effective treaty. This will not be easy, as both countries have powerful vested interests in plastics production. Technical cooperation and financial support for improving product design might be one place to forge goodwill and compromise. Going forward, it may be necessary to resort to voting and proceed without authoritarian petrostates that are negotiating in bad faith. These states are unlikely to implement a treaty in any case, even a weak treaty. The United States may also need to be left out at least initially, as the Trump administration will almost certainly oppose a high-ambition plastics treaty. As with the Paris Agreement on Climate Change, however, subnational jurisdictions (e.g., in Hawaii and California) and consumer-facing brands in the US may still meet or exceed treaty targets in response to local activism, shifting global norms, and demand for plastic-free products.

Calls for a high-ambition plastics treaty generated a sense of hope and momentum in Busan. In June, 2025, at the United Nations Ocean Conference in Nice, France, 95 countries reaffirmed a commitment to negotiating an ambitious treaty to govern the full life cycle of plastics, phase out hazardous plastics and chemicals of concern, and reduce global plastics production [70]. But diplomatic pledges must not give way to complacency. Achieving greater ambition will require the meaningful participation of frontline and fenceline communities, youth groups, civil society organizations, and Indigenous peoples and other rights holders. Scientific research must deepen into the drivers and consequences of plastic pollution, and independent scientists will need more access to closed-door negotiations to correct misrepresentations of evidence. More emphasis must be placed on human rights, the right to a clean and healthy environment, and the principles of equity and justice. Civil society pressure must intensify, with expanded campaigns and media coverage to expose the disproportionate responsibility of particular companies and states. Finally, the high-ambition axis of power must grow stronger, and high-ambition states must confront and resist the

axes of pro-plastics power and stand firm in demanding strong, binding commitments to regulate the full life cycle of plastics.

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No data was used for the research described in the article.

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