

# Perspectives.

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## An Opportunity to End Plastic Pollution:

A Global International Legally  
Binding Instrument

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# Executive Summary

Global plastic production and consumption has grown exponentially since the 1950s, with annual global production projected to reach roughly 450 million tons by 2025. As production increases, so does plastic pollution, with the ocean accumulating most of it. It is estimated that 11 million metric tons of plastics enter the ocean every year from land-based sources alone. Moreover, the plastics sector is a major and growing driver of fossil-fuel demand and greenhouse-gas (GHG) emissions. Finally, plastic production is also associated with the use of chemical additives, including some listed as hazardous under the Stockholm Convention and many of which have been shown to be detrimental to human and environmental health.

Recognizing the dangers of plastics as destructive and prevalent pollutants, in 2022, the United Nations Environmental Assembly agreed on a resolution named “End plastic pollution: Toward an international legally binding instrument”. This resolution establishes an Intergovernmental Negotiating Committee (INC) to draft an international legally binding instrument (ILBI) to tackle this multi-pronged crisis.

To effectively address this crisis, an ambitious and well-crafted ILBI should be designed to be fit-for-purpose. This means, the agreement should include measures addressing the full life cycle of plastics including provisions on: i) reducing plastic production, including a minimum 50% reduction in single-use plastics by 2050; ii) ensuring plastic products are designed for circularity; iii) establishing a just inclusion of the informal waste sector; iv) including specific measures to address abandoned, lost, and discarded fishing gear – known as “ghost gear”; and v) addressing microplastics.

At the same time, an ambitious agreement that includes these measures should be supplemented by strong regulatory and means of implementation frameworks at the local, national, and international level to ensure a continued and sustained impact.

Negotiators have once-in-a-lifetime opportunity to address the three major planetary crises and, having the benefit of hindsight, should apply all the lessons learned in previous MEAs, and rise to the occasion ensuring that this ILBI is designed in the most ambitious manner. Our communities, wildlife, and ocean are counting on its success.

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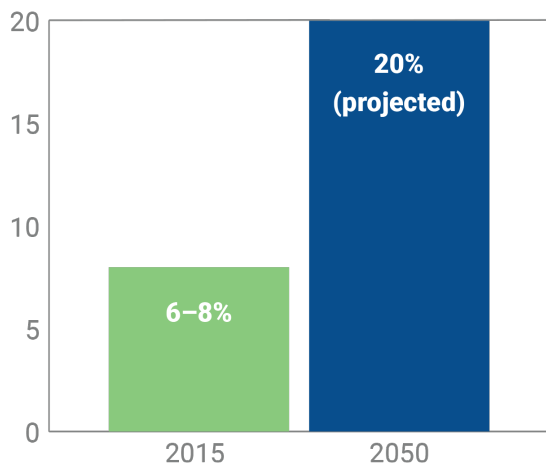
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# Introduction:

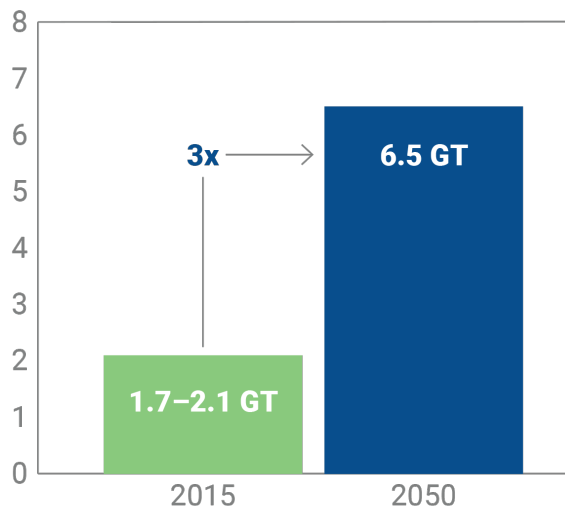
Global plastic production and consumption has grown exponentially since the 1950s, with global plastic production projected to reach roughly 450 million tons by 2025. Left unabated, it is estimated that annual production will reach 1.2 billion tons by 2060<sup>1</sup>. As production increases, so does plastic pollution. The ocean accumulates a vast majority of this deadly pollution with an estimated 11 million metric tons of plastics entering the ocean every year from land-based sources, which accounts for at least 85% of all marine litter, globally<sup>2</sup>. Beyond widespread contamination in the ocean, scientists have discovered plastic pollution nearly everywhere they've looked—on mountain tops, in the Arctic, and even within human bodies.

The plastics sector is a major and growing driver of fossil-fuel demand and greenhouse-gas (GHG) emissions. Thus, to achieve a healthy and livable climate, we must address the plastic pollution crisis. Made from and powered by fossil fuels, the plastics sector uses as much oil as global aviation<sup>3</sup>, producing 3-4% of global greenhouse gas emissions<sup>4</sup>. If the plastics sector's growth continues unchecked, plastics will account for 20% of global oil use by 2050<sup>5</sup> — more per capita than personal transportation<sup>6</sup>. That would result in 6.5 gigatons of GHG emissions annually by 2050, a nearly 300% increase over 2015 levels<sup>7</sup>.



**Figure 1:** The petrochemicals sector, including plastic, is the fastest growing source of oil demand globally; plastic production accounted for 6-8% of oil demand in 2015 (green). This is projected to grow to 20% of global oil demand by 2050 (blue). GRAPHIC: Ocean Conservancy. SOURCE: World Economic Forum, 2016.

The petrochemical infrastructure that produces plastics emits significant air and water pollution with severe health consequences for neighboring, often coastal and fence-line communities. Climate-driven stressors to these communities such as sea level rise and flooding increase the risk of operating these facilities, making accidents and unpermitted pollution releases into the neighboring communities more likely<sup>8</sup>, and increase the amount of plastic pollution entering communities and waterways<sup>9</sup>.



**Figure 2:** Significant greenhouse gas emissions are produced across the lifecycle of plastic production, use, and disposal, accounting for 3-4% of global emissions in 2015 (green). This is projected to triple by 2050 (blue). GRAPHIC: Ocean Conservancy. SOURCE: Zheng and Suh, 2019, ODI, 2020.

Plastic production is also associated with the use of chemical additives, including some listed as hazardous under the Stockholm Convention, many of which have been shown to be detrimental to human and environmental health. On average, non-textile plastics contain 7% chemical additives by mass and by 2050, the plastics sector is projected to use 2 billion metric tons of these potentially harmful additives<sup>10</sup>.

Recognizing the dangers of plastics as destructive and prevalent pollutants, the international community under the UN Environmental Assembly (UNEA) has initiated action by moving forward with the process to dedicate a multilateral environmental agreement (MEA) to tackle the plastics problem.

In 2022, from its headquarters in Nairobi, Kenya, UNEA agreed on a resolution named “End plastic pollution: Toward an international legally binding instrument,” which was the first major international step in addressing this plastic pollution emergency.

Negotiators and interested parties met in late May and early June 2022 in Senegal to discuss the rules of procedure and timeline for this process. After agreeing to these in late November 2022, the first round of negotiations of the Intergovernmental Negotiating Committee (INC) to draft an international legally binding instrument (ILBI) took place, preceded by regional consultations and a Multistakeholder Forum.

As public health, community protection, environmental justice, ocean health, biodiversity, and climate are all intrinsically connected with the issue of plastic pollution, this agreement represents a historic opportunity to make progress on this multi-pronged crisis.

### Recommended elements for a robust and comprehensive internationally legally binding instrument (ILBI)

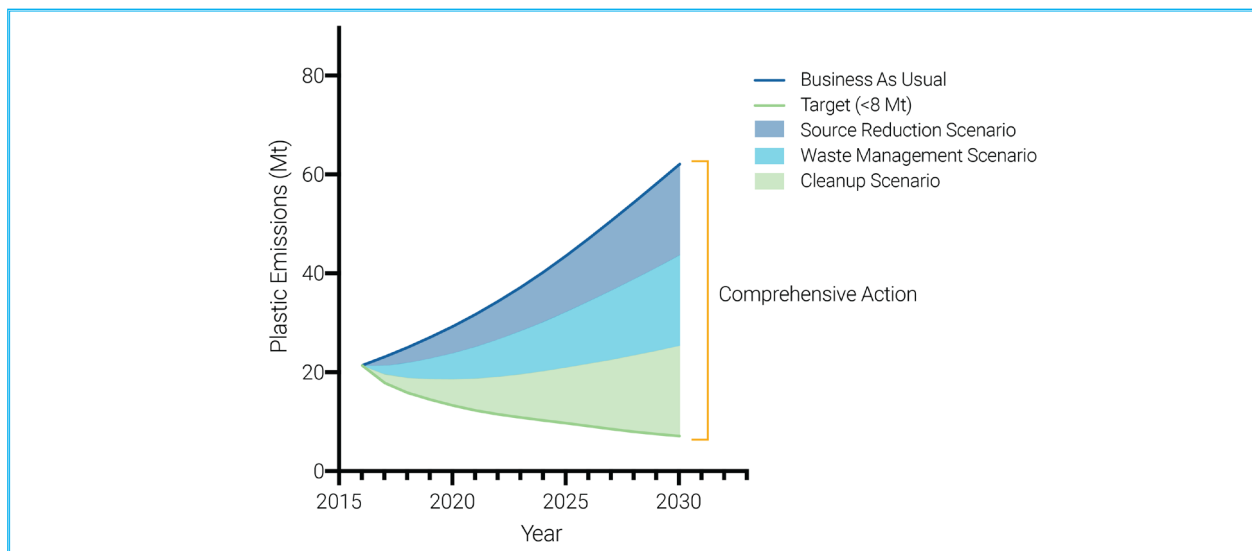
As the process continues with the next in-person meeting poised to take place in May of 2023, we

strongly recommend several items be considered by negotiators and the international community to make this international agreement effective in carrying out the needed system change to meet the urgency of this moment.

### Reduce Plastic Production

We must **reduce the amount of plastic we produce and use**. Research coauthored by Ocean Conservancy found that to reduce ocean plastic pollution to 2015 levels (8 million metric tons annual emissions) plastic production and use needs to be reduced 25-40% globally (with high income countries needing to reduce more), in addition to increased circularity in waste management and continued targeted cleanups<sup>11</sup>. This research demonstrates that recycling and enhancing waste management alone are insufficient to tackling this crisis.

Eliminating problematic and unnecessary plastic items, including hazardous additives, such as single-use plastics first would result in a significant reduction in



**Figure 3:** Interventions to decrease annual global plastic emissions into aquatic environments showing a business as usual scenario<sup>i</sup> (blue line), a scenario that focuses on plastic source reduction<sup>ii</sup> (blue shaded), a scenario that focuses on increased waste management<sup>iii</sup> (aqua shaded), a scenario that focuses on increased recovery/cleanup of annual plastic emissions (light green shaded), and a scenario to achieve a target of less than 8 million metric tons of plastic emissions into the ocean each year<sup>iv</sup> (green line) demonstrating that only by combining these interventions can we achieve the target (orange line). (GRAPHIC: Ocean Conservancy. SOURCE: Borrelle, S.B., et al., 2020.)

- i The business as usual scenario assumes an increase in plastic waste generation each year, a 2016 level of waste management, and zero recovery of annual plastic waste emissions.
- ii The source reduction scenario assumes a 25% reduction in plastic generation along with minimal interventions for managing plastic waste (30-90% of plastic waste is properly managed depending on country income status) and recovery (10% of annual plastic emissions into the aquatic environment recovered).
- iii The waste management scenario assumes 50-95% of all plastic waste is properly managed depending on country income along with minimal interventions for source reduction (0-10% depending on country income) and recovery (10% of annual plastic emissions recovered).
- iv The target scenario assumes comprehensive, ambitious action across all interventions: 25-40% source reduction depending on country income, 66-99% of plastic waste properly managed depending on country income, and 40% of annual plastic emissions into the aquatic environment are recovered.

plastics (packaging represents 40% of plastic production annually<sup>12</sup>) and would decrease contamination in the waste stream, enabling an enhanced transition to a circular economy.

That is why Ocean Conservancy is urging negotiators to include a minimum 50% target for source reduction of single-use plastics by 2050 as part of the international legally binding instrument. By 2050, this reduction would eliminate over 2.6 billion metric tons of plastics and prevent 10.8 to 11.5 billion metric tons of CO<sub>2</sub>-equivalent emissions.<sup>13</sup>

This marks a much-needed change in tackling plastic pollution globally, but there is precedent for strong source reduction mandates as part of a comprehensive approach to addressing plastic pollution.

For example, the state of California, USA, whose gross domestic product (GDP) represents the fifth largest economy in the world, passed legislation (SB 54) in 2022 that will require a 25% reduction in the use of all single-use plastic packaging and food ware in the state by 2032<sup>14</sup>. Ocean Conservancy scientists estimate that this policy will result in the elimination of 23 million tons of single-use plastics, equivalent to 115 million tons of CO<sub>2</sub>e emissions avoided over the next 10 years. This type of bold and ambitious policy is compatible with a growing population and economy<sup>15</sup>, a healthy ocean, and a livable climate.

Additionally, reducing demand for virgin plastic resin (99% of which is derived from fossil fuels<sup>16</sup>) is complimentary to robust source reduction mandates and incentivizes the transition to a circular economy. To do this, a tax imposed on manufacturers of plastic products and packaging for the purchase of virgin plastic feedstock would incentivize businesses to use less virgin plastics. In addition, post-consumer recycled content requirements for certain plastic products could also reduce demand for virgin plastic resin, while ensuring stable demand for recycled content, which will facilitate enhanced investment in collection and recycling infrastructure<sup>17</sup>.

### Design for Circularity

It is important that we **ensure plastic products are designed to be circular**. Ocean Conservancy data shows<sup>18</sup> that nearly 70% of the most common plastic debris collected every year in the International Coastal Cleanup® is not recyclable, meaning there was no pathway to maintain these materials within the circular economy. Upstream design is critical to facilitate collection, sorting, and reuse.

One of the most effective ways to move towards a circular economy is to prioritize designs and systems that enable long-term reuse and refill (along with recycling and repair) of products. For products that are not transitioned to reuse, it is critical that they are designed with circularity in mind to ensure that the



Figure 4: Dominican Republic, Playa de las Tortugas ©Ocean Conservancy



Figure 5: Washington DC 2021, @Rafeed Hussain and Ocean Conservancy

plastic product, including any labels or additives, are locally recyclable or compostable. This will require intentional upstream redesigning of products and the removal of harmful chemical additives that contaminate circular waste streams.

Additionally, the implementation of extended producer responsibility (EPR) schemes and other mechanisms that hold plastic producers financially responsible for the full lifecycle of their products and packaging can ensure better upstream design. According to studies<sup>19,20</sup> the most effective EPR systems couple upstream design requirements with cost-sharing requirements for the producers to support increased collection and recycling.

To this end, the European Union, through the European Committee for Standardization (CEN), is currently working on technical documents and requirements for CEN/CENELEC TC/466, that aims to address the circularity and recyclability of fishing gear and aquaculture equipment.

Other recent examples, including California's SB54, showcase the ability to couple EPR with upstream design requirements (all single-use packaging of all materials must be entirely recyclable or compostable by 2032) as well as source reduction for a comprehensive approach to addressing plastic pollution<sup>21</sup>. Deposit return schemes (DRS) are another effective mechanism to facilitate increased producer responsibility to standardized designs and labeling to increase collection and recycling (e.g., Ecuador's highly effective system<sup>22</sup>).

Lastly, clearly defining what constitutes recycling is critically needed. Recycling should return or maintain

plastic materials within the market without changing the basic molecular structure of the material being recycled, like mechanical recycling, the most common recycling technology worldwide. Under this definition, current chemical recycling technologies that convert plastics to energy and/or fuel (e.g., pyrolysis and gasification), and waste-to-energy and waste-to-fuel technologies, should not be considered as recycling<sup>23</sup>.

### Just Inclusion of Informal Sector Waste Collectors

To achieve these objectives, it is crucial to **ensure just inclusion of informal sector waste collectors** (ISWCs) or "waste pickers." According to the International Labor Organization, between 15 and 56 million people work in informal solid waste collection globally and are responsible for nearly 60% of all plastics collected and recycled<sup>24</sup>. In short, there would be no waste management in much of the world without these critical workers. ISWCs should be a part of any dialogue focused on waste management policy development, recognizing that local, regional, and national contexts for ISWCs vary. It is critical for ISWCs to be fully engaged participants in discussions and the development of a just transition plan as part of implementing local and international policies to end the plastics crisis.

### Include Abandoned, Lost, and Discarded Fishing Gear – "Ghost Gear"

Given the outsized ecological and economic impacts on wildlife and maritime industries, accordingly, it is important that the ILBI includes plastic pollution from **abandoned, lost, or otherwise discarded fishing gear (ALDFG, also known as "ghost gear")**. Ghost gear

is four times more likely to harm marine life through entanglement than all other forms of marine debris combined, making it the deadliest form of plastic pollution<sup>25</sup>, which has staggering implications for food security, fisheries sustainability and ultimately, the bottom line of the fishing industry and those whose lives and livelihoods depend on it. Ghost gear has caused a 5-30% decline in some fish stocks<sup>26</sup>, with one study estimating that 90% of species caught in lost gear were of commercial value<sup>27</sup>.

At present, there is no global overarching regulatory framework in place for ghost gear. The current text reference 'pollution in the marine environment' in Resolution 5/14, that gave the mandate for the ILBI to be negotiated, presents the opportunity for ALDFG to be considered by negotiators. This is a once-in-a-generation chance to holistically address this most harmful form of marine litter to marine wildlife. Negotiators are encouraged to review the [Global Ghost Gear Initiative's Best Practice Framework for the Management of Fishing Gear](#) and for the [Management Of Aquaculture Gear](#) that contains practical guidance for 12 different organization categories across the seafood value chain on prevention, mitigation and remediation strategies for reducing ghost gear in our ocean.

### Address Microplastics

Addressing **microplastics** should also be a priority in the ILBI. The most pervasive<sup>28</sup>, mobile<sup>29</sup>, and easily distributed<sup>30</sup> type of plastic pollution, microplastics (defined as plastics less than 5mm in size) are known to be ingested by humans<sup>31</sup> through the food we eat<sup>32</sup>, water<sup>33</sup>, and other beverages<sup>34</sup> we drink, and the air we breathe<sup>35</sup>. Moreover, these microplastics are known to act as vectors of harmful chemicals, heavy metals, and pathogens.

To address this issue, source reduction strategies centered on primary microplastic production (e.g., prohibiting the use of microplastics in personal care products<sup>36</sup>, pellets from production facilities) and enhanced regulatory frameworks and interventions for known sources of secondary microplastics (e.g., microfibers from washing machines, tire wear in stormwater, agriculture, paint) must be considered.

**Negotiators must ensure that this ILBI is designed to be fit-for-purpose – our communities, wildlife, and ocean are counting on its success.**

### Conclusion

The ILBI is a once-in-a-generation opportunity to address the global plastic pollution crisis.

To reach a healthy ocean and climate, the transition to a circular economy is necessary but alone, not sufficient. The science is clear – we must reduce the amount of plastics produced and used in the first place in addition to transitioning to a more circular economy.

After decades of increasing plastic production, and subsequent pollution, it is critically important that producers of plastics are held responsible for their contribution to this crisis through both financial mechanisms and requirements to change their upstream design to comply with a transition to a circular economy.

An ambitious and well-crafted ILBI could have a positive impact on the interlinked global environmental crises the world currently faces: climate, biodiversity loss, and plastic pollution—all of which are also public health and environmental justice crises.

The elements identified in this Perspective are recommended for negotiators to craft a comprehensive and impactful agreement. At the same time, the ILBI should be supplemented by strong regulatory and implementation frameworks at the local, national, and regional level to ensure continued and sustained impact.

Negotiators at the Intergovernmental Negotiating Committee should consider the great privilege and responsibility that rests on their shoulders, and, having the benefit of hindsight, should apply all the lessons learned in previous MEAs, ensuring that this ILBI is designed to be fit-for-purpose – our communities, wildlife, and ocean are counting on its success.

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