

A vision for a corporate plastic accountability framework

Co-creating a vision: building blocks for developing plastic pollution target setting aligned to the UN Treaty on Plastic Pollution and mitigation actions led by best-in-class science.

Context

After half a decade of science documenting the impact of plastic pollution on marine ecosystems, terrestrial ecosystems, human health, and quantified economic losses, global policy is catching up to avoid continued and increasing plastic pollution¹. The UN Treaty on Plastic Pollution negotiations aim to reach an internationally binding instrument on plastic pollution that addresses the full life cycle of plastic. While the treaty is likely to set parameters for national level plastic pollution mitigation, a scientific² framework translating public sector goals to corporate targets is lacking.

Lack of guidance on target setting should not delay action. Establishing a framework with corporate targets would avoid individual corporate pledges that are too low and disparate compared to the scale of the issue. An accountability framework would facilitate the process of defining corporate action plans and allow alignment on timelines for action. If the UN Treaty on Plastic Pollution is to set the roadmap for national state actors to reach zero pollution by 2040, an accountability framework can support setting credible corporate action roadmaps, serving as a catalyst for countries to reach their national contributions to the treaty goal. Ultimately, concerted action can lead to systems change.

In November 2023, the Plastic Footprint Network (PFN) published an updated methodology for plastic footprint calculation, building on existing methodologies³ and coalescing practitioner expertise⁴. The plastic footprint methodology can now complement existing LCA methodology and circularity indicators to measure the impact of plastics. While the scientific basis for corporate plastic pollution accounting now exists, a framework for target setting to mitigate plastic pollution has yet to emerge.

The aim of this vision statement is to propose a collective way forward for setting a best-in-class corporate accountability framework for plastics, building on existing efforts to facilitate common pledges⁵. The statement presents an ideal vision of the elements a corporate accountability framework should encompass, describing mitigation actions and how targets could be set. It concludes with the next steps for the framework evolution.

¹Carpenter, E. J., Anderson, S. J., Harvey, G. R., Miklas, H. P., & Peck, B. B. (1972). Polystyrene spherules in coastal waters. *Science*, 178(4062), 749-750

Moore, C. (2011). *Plastic ocean: How a sea captain's chance discovery launched a determined quest to save the oceans*. Penguin
Bucci, K., Tulio, M., & Rochman, C. M. (2020). What is known and unknown about the effects of plastic pollution: A meta-analysis and systematic review. *Ecological Applications*, 30(2), e02044.

² "Scientific" throughout the vision statement refers to peer-reviewed scientifically published methodologies.

³ Peano, L., Kounina, A., Magaud, V., Sophie Chalumeau, Sofia Zgola, & Julien Boucher. (2020, May). Plastic Leak Project. Quantis and EA.

ReSource Footprint Tracker: Methodology Overview.(2020, October). World Wildlife Fund.

⁴ The Plastic Footprint Network involved over 35 organizations and over 100 practitioners in the harmonization and update of the plastic footprint methodology.

⁵ The global commitment 2022: How to Build a Circular Economy. (2022). Ellen Macarthur Foundation and United Nations Environment Program

Perreard, S. & Hofmeijer, I. (2022) *Enabling Corporate Plastics Disclosure: opening the debate for the adoption of universal metrics*. World Business Council for Sustainable Development

Garin, D., Perreard, S., & Hofmeijer, I. (2023) *Enabling Corporate Plastics Disclosure: building a corporate accountability system for plastic pollution*. World Business Council for Sustainable Development

An ideal vision

The corporate accountability framework would provide strategic guidance for corporate action with the highest mitigation potential, in alignment to the government requirements to be set by the treaty. The objective would be to galvanize collective efforts towards the most needed and effective combination of mitigation actions along the plastic life-cycle, while also considering potential synergies and trade-offs with relevant sustainable development goals.

Current mitigation actions are substantially directed towards the end of the plastic life cycle, i.e. plastic waste collection and recycling. The impacts of plastics, though, are as versatile as the products themselves. Plastic was identified in 2022 as part of the 10th planetary boundary novel entities, and is also linked to the climate change and loss of biodiversity integrity planetary boundaries.⁶

To capture the extent of impacts caused by plastics, an ideal framework would address four main areas of protection at all stages of the plastic life cycle:

- Ecosystem health: impacts on ecosystems induced by plastic pollution, for both conventional and alternative types of plastics.
- Human health: impacts on human health resulting from the exposure to plastic pollution
- Climate: greenhouse gas emissions from the plastic life cycle
- Primary resources: consumption of non-renewable resources

It is worth noting that plastic pollution impacts extend beyond the dimensions above. The proposed framework does not capture associated social justice issues.

An ideal framework would robustly address all stages of the plastic life cycle. The framework would consider an array of mitigation strategies such as reduction, substitution, reuse, improved collection and recycling, improved disposal and effective environmental restoration. Mitigation strategies would need to be considered in the context of the mitigation hierarchy, prioritizing upstream interventions. Upstream interventions show higher effectiveness in reducing plastic pollution and encourage responsible plastic usage from the outset. To achieve optimal results, mitigation strategies must ultimately integrate a combination of both upstream and downstream interventions, leveraging synergies for maximum impact.

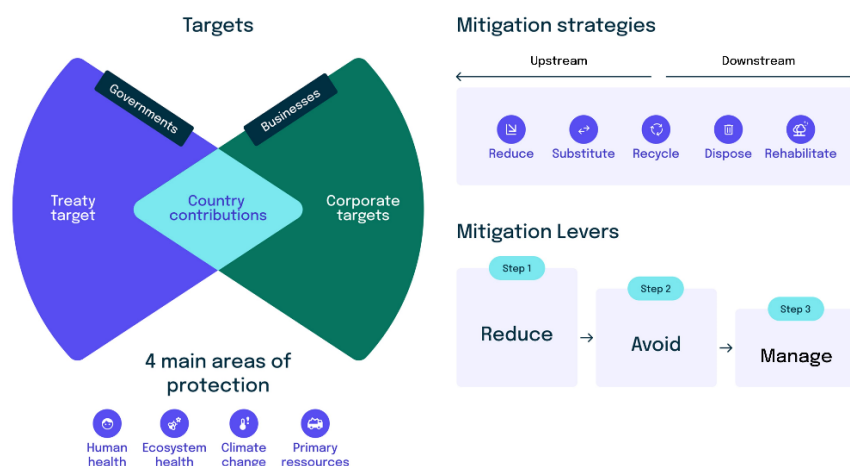


Figure 1: Vision for accountability framework

⁶ Persson L., Carney Almroth M. B., Collins D., Cornell S., de Wit C. A., Diamond M., Fantke P., Hassellöv M., MacLeod M., Ryberg M. W., Søgaard Jørgensen P., Villarrubia-Gómez P., Wang Z., & Zwicky Hauschild M. (2022). Outside the Safe Operating Space of the Planetary Boundary for Novel Entities. *Environmental Science & Technology* 56 (3), 1510-1521. DOI: 10.1021/acs.est.1c04158

Corporate targets should be transparent, robust, comparable and actionable. Transparency is achieved through clear criteria, publicly available methodologies, third-party verification and validation, and regular public reporting and disclosure. Robustness comes from the rigor of the scientific analysis as they are based on science-based metrics that are continuously improved by regular review and updates. Finally, a comparable and actionable target allows companies to set near-term objectives for long-term goals, providing a comprehensive scope that is aligned with business goals.

The framework would provide consistency, clarity, and accountability by establishing tools, instruments, monitoring and evaluation processes that align all stakeholders on a level playing field. Such an approach improves comparability of data and facilitates information exchange to track progress. Such common ground would improve communication between corporations, governments, and civil society on coordinated actions to tackle plastic pollution.

Mitigation

Corporate mitigation frameworks exist for carbon since the Paris Agreement to tackle climate change. In contrast, mechanisms for addressing global plastic pollution are still in their early stages. Corporate accountability for plastic pollution mitigation will undoubtedly evolve alongside corporate sustainability disclosure efforts.

Plastic pollution exhibits spatial and physico-chemical heterogeneity. The language and strategies proposed by the corporate plastic accountability framework should hence be carefully tailored to the specific nuances of the plastic pollution context, in order to avoid controversies and flawed solutions.

A mitigation framework built around three consecutive steps offers a clear description and hierarchy of the corporate action landscape, so as to maximize contribution to the global treaty target. Separating actions into steps allows to differentiate between within and beyond the value chain actions. Each step represents a goal:

- Step 1 – Reduce: absolute reduction of company's leakage through actions inside of their value chain.
- Step 2 – Avoid: avoiding virtual⁷ leakage from others through the company's solution and through financial contribution to avoidance projects.
- Step 3 – Manage: plastic waste management either through pre-leakage or post-leakage actions. On the pre-leakage side, this includes investments into waste management. On the post-leakage side, this would address legacy pollution.

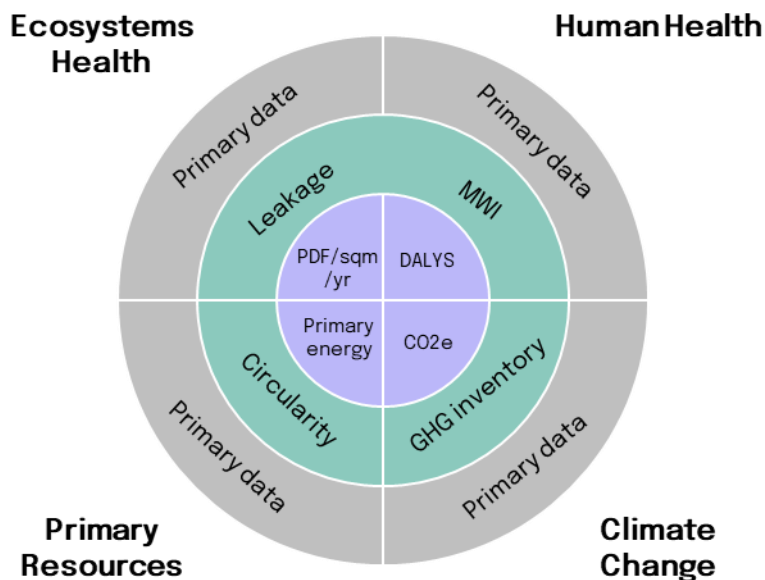
The framework should provide guidance on how much (in percentage) should be achieved in each step, building from existing quantitative analysis, for example Breaking the Plastic Wave⁸. Actions should primarily lie in steps 1 and 2, directly impacting the production of plastic. Such an approach would guide companies to focus on actions that are most important to reach the target.

Targets

While gaps remain to develop metrics needed for all four areas of protection, the lack of perfect science should not hold back from setting targets and implementing mitigation actions accordingly where it is already possible. Figure one presents metrics that can be used to evaluate each area of protection. The impact metrics directly evaluate each area of protection. Impact metrics are calculated from different data inventories, namely the primary activity metrics. Primary activity metrics are assessed from actionable metrics. While impact metrics are not yet accessible, primary activity metrics can already be measured with existing methodologies.

⁷ “Virtual” refers to the difference in plastic leakage compared to a reference scenario

⁸ Pew Charitable Trusts and SYSTEMIQ (2020). Breaking the Plastic Wave: A comprehensive assessment of pathways towards stopping ocean plastic pollution.



Impact metrics - Primary activity metrics - Actionable metrics

Figure 2: Metrics for target setting. Acronyms definition: PDF - percentage disappeared fraction per square meter per year; DALYs - Disability Adjusted Life Years; CO2e - CO2 equivalent; MWI mismanaged waste index.⁹

The overarching targets will be set by the Treaty. The Treaty target would serve as the minimum compliance and ambition level for corporate targets. The corporate accountability framework for plastics would translate targets by area of action for each industry actor to align to actions of highest impact depending on the company’s position in the plastics value chain and geography of impact.

With the existing science, metrics that could for example be used to set targets include:

- Absolute reduction
- Percentage yearly virgin plastic consumption
- Percentage yearly mismanaged waste
- Circularity indicator
- Reuse and/or repair rates
- Use / presence of chemicals of concern
- Overall burden of disease due to presence of chemicals of concern

Further research is needed in order to set targets for:

- Proportional investment towards different mitigation strategies in order to match scenarios defined by science (e.g. Breaking the Plastic Wave)
- Sectorial approach to the desired mitigation efforts, based on their unique situation

Development of the framework will require defining the combination of metrics to be assessed for target setting.

⁹ Plastic Footprint Network (2023). Plastic Footprint methodology – Introduction to Plastic Footprinting module

Next Steps

The treaty should provide an overarching goal and alignment on language and terminology. Yet the treaty will unlikely provide all the elements needed for a corporate accountability framework for plastics. To complete the framework, methodologies are needed for translating global treaty goals into the minimum level of ambition for corporate targets, directing corporations towards the most effective mitigation options and the robust, credible & consistent implementation of disclosure measures.

For successful adoption of the framework, reduction pathways by sector need to be defined. While the PFN plastic footprint methodology offers the basis to assess the efficiency of mitigation actions and interventions, a robust additionality methodology is yet to be developed. Alongside this, allocation rules, similar to those of 'Product Category Rules' in LCA analysis, need to be developed in a multi-stakeholder and consultative way.

The aim of this vision statement was to propose initial building blocks and ways forward while acknowledging the current gaps and limitations. For the building blocks presented above to be taken forward, the PFN invites relevant parties to engage in an active consultation, understanding how from their standpoint they can contribute to a corporate plastic accountability framework.

The work ahead to build a coherent and efficient corporate plastic accountability framework is significant in time and effort. The present moment, however, presents a timely opportunity to initiate discussions among stakeholders to keep the momentum going alongside the ongoing negotiations for the UN Treaty on Plastic Pollution.