Addressing Plastics from Bottled Water: Towards a Global Governance Framework

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Executive Summary

The rapid rise of bottled water consumption has commodified a basic human right, intensifying the global plastics crisis. Due to limited access to reliable tap water, aggressive marketing, and inadequate regulatory frameworks, bottled water has become a widespread alternative, generating an enormous volume of single-use plastic waste. This reliance fuels fossil-based plastic production, with waste now polluting oceans, rivers, and ecosystems at an alarming rate.

Addressing this issue demands a coordinated, multi-scalar approach. A global plastics treaty, endorsed by nearly 180 countries, represents a critical step toward reducing plastic pollution. This agreement can foster essential advances in regulation, recycling, and sustainable production practices. Solutions must operate at multiple levels:

Global: A binding plastics treaty that coordinates across nations, successfully reduces plastic pollution across the plastics life cycle, truly protects human health, and minimizes climate impacts.

National: Harmonizing policies to increase coordination across national and subnational scales for plastic management.

Local: Strengthening waste management systems integrating the formal and the informal, as well as empowering and educating citizens to shift away from single-use plastics.

In sum, a collaborative, multi-level strategy is therefore essential to restore water as a public good, to minimize reliance on disposable plastics, and simultaneously address the global negative impact of plastic waste.

The Problem: Bottled Water as a Commodity Creates a Market for Increased Plastics Consumption

Water is essential for human life and a necessary and vital element of societal functioning (Alcamo et al. 2008; Gupta et al. 2013). According to the World Water Assessment Programme (WWAP), 2.2 billion people had no access to safe drinking water, and 1.4 billion people were affected by droughts globally.

Ensuring equitable and universal access to water requires designing policy instruments that facilitate water governance across multiple types of water and policy issues (Gupta, Pahl-Wostl, and Zondervan 2013; Pacheco-Vega 2020a; Tortajada 2010). One of the global strategies to ensure universal access to water was the United Nations resolution to enshrine access to water and sanitation as a human right.

In recent years, the United Nations' decision to include packaged water as a potentially helpful strategy to achieve SDG Goal 6.1 targets (Walter, Kooy, and Prabaharyaka 2017) has meant that the governance of bottled water has been muddied. It is no longer a strict expectation for governments to ensure that citizens have access to tap water directly from water fountains and at the household level.

Governing bottled water requires developing robust public policy instruments, as well as strong regulatory regimes across contexts (Pacheco-Vega 2019). Though there are regulations across the globe that establish governments' responsibility for water provision at the household level, requirements can be somewhat lax and their scope rather limited. This dereliction of duty on the part of governments creates additional markets for bottled water production (Hall 2010; Hawkins 2017; Pacheco-Vega 2019) and sales, with the subsequent increase in plastic pollution generated from packaging the vital liquid.

The Social and Environmental Impacts of Bottled Water

Consumption of bottled water has grown exponentially in recent decades, bringing along the generation of a huge volume of plastic bottles disposed of in massive amounts in landfills. Over 10 million tons of plastic waste are discarded in the oceans, and more than 50 percent of the total plastic produced—almost 380 million tons per year—is single-use. Our global "use-and-dispose" culture has greatly contributed to ocean pollution and the generation of multiple environmental problems related to plastic waste management and disposal, including increased production and use of fossil fuels and the contamination of both surface and groundwater bodies.

Plastics' entire life cycle creates multiple environmental and social challenges (Duvic-Paoli 2020; Ferraro and Failler 2020; Löhr et al. 2017; Vince and Hardesty 2018; Xanthos and Walker 2017). Because plastics are made from fossil fuels, their permanence in natural environments is prolonged and there are multiple substantial challenges in removing them. Plastics from fossil fuels create pollution in enclosed water bodies (lakes and reservoirs) as well as in open water (oceans). Long-term negative effects of plastic pollution include health impacts from microplastics present in bottled water (Borrelle et al. 2017; Lebreton et al. 2018; Pettipas, Bernier, and Walker 2017).

Why does the Governance of Bottles Water Matter for the Reduction of Plastic Pollution?

Bottled water creates environmental problems in at least three ways:

1. By effectively commodifying a human right (Pacheco-Vega 2020b).
2. By exacerbating the production of fossil fuels required to produce plastic bottles (Gabrys, Hawkins, and Michael 2013; Krantzberg et al. 2023; O'Neill 2019).
3. And, by increasing the amount of plastic being disposed of across the globe (de Deus et al. 2024).

One of the gravest issues with the global consumption of bottled water and the substitution of tap water with packaged water is the lack of a governance model to control, regulate, and reduce plastic bottle production. A problem that might seem local, like bottled water consumption, actually requires an international agreement. The global plastics agreement presents multiple opportunities, including prioritizing the reduction of plastics and expanding the implementation of reuse systems rather than relying on recycling, bio-based, biodegradable, compostable plastics, and non-plastic alternatives. Similarly, a global agreement focused on reducing and eliminating excessive plastic production will help make production processes more efficient. Finally, another key opportunity lies in fostering collaboration between countries to provide access to human capital and scientific knowledge on implementations and better waste treatment and disposal technologies.

Potential Policy Solutions by Scale (Global, National, Local)

At the global level, plastics governance necessitates coordination across countries and stakeholders (Nielsen et al. 2019). There are multiple constituencies that need to be included in the discussions and negotiations that tackling the issue of pollution due to global plastics entails. Industry representatives (following a similar approach to Article 5.3 of the FCTC), academics, civil society organizations, government officials must coordinate and engage in negotiations that produce robust policy options (Evans et al. 2020), including a legally binding instrument.

At the national level, governments will also need to collaborate and coordinate with subnational governments at the provincial/state/regional level. Because plastics' regulation varies across countries' regulatory frameworks, it is important to harmonize these across all scales (O'Neill 2019).

At the local level, municipalities and cities will need to engage in discussions with stakeholders that may not be present in global negotiations. These include extremely vulnerable populations, such as informal waste pickers (Dauvergne 2018; Gall et al. 2020; O'Hare and Nøklebye 2024; Pacheco-Vega and Parizeau 2018). Urban recyclers have already been part of the global conversations on plastics' governance. As just an example, the International Alliance of Waste Pickers have actively participated in the negotiations for a global plastics treaty since 2022.

The Need for a Global Plastics Treaty

Continued massive production of single-use plastic bottles and the consumption of water packaged in these bottles negatively impacts marine and terrestrial ecosystems, reduces the universality of the human right to water, and thus underscores the need for a global plastic reduction agreement. On March 2, 2022, nearly 180 countries endorsed a historic resolution to create such an agreement, aiming to eliminate all plastic pollution by 2040.

Given that plastics are a global environmental issue, it is imperative that their governance be global too

(Borrelle et al. 2017; Raubenheimer and McIlgorm 2017; Tessnow-von Wysocki and Le Billon 2019). Individual efforts by countries to reduce plastic pollution are extremely important and welcome but these still necessitate international agreements and collaboration across countries for multiple issues, including cross-border plastic markets, transportation and storage, and final disposal.

Even though bottled water is distributed globally (Hawkins 2011, 2017; Pacheco-Vega 2023), water supply is primarily governed by local agencies. At the city level, bottled water is frequently picked up by informal waste pickers. Therefore, it is also important to consider them in the broad range of multiple stakeholders in the plastics governance system (Gall et al. 2020; O'Hare and Nøklebye 2024; Pacheco-Vega 2022).

Conclusion

Plastics from bottled water present a significant challenge to enacting the human right to water while increasing pollution across multiple water bodies and territories. A significant challenge in global plastic governance is that for an agreement to exist, we need to consider the full lifecycle involved in plastic generation by the bottled water industry and allied sectors. Another major challenge in global plastic governance is the structure of international environmental agreements. While some treaties have non-binding clauses, to reduce excessive plastic production and disposal in oceans, lakes, rivers, and urban and peri-urban areas, it is essential for regulations to be binding, according to both international environmental law standards and the legislation of the countries involved in these treaties.

Consumers have substantial power to control and reduce bottled water consumption, and thus reduce plastic production that ends up being illegally or irregularly disposed of in lakes, rivers, oceans, and other water bodies. However, conscious decisions to reduce bottled water consumption must be accompanied by the establishment of institutional arrangements and reforms that allow legislation for various initiatives to reduce the volume of produced plastic waste that reaches disposal.

Reducing bottled water consumption and single-use plastic production is not solely the responsibility of governments or citizens. Only through the tripartite collaboration of governments, industry, and society can we make strides toward more sustainable conditions and reduce the negative impact of single-use plastics on global water bodies.

Policy Recommendations from Azul

For the Plastics Treaty to succeed in reducing plastic pollution throughout its life cycle, truly protect human health and minimize climate impact, it must address the following priority areas:

- Substantially reduce aggregate global plastic production to protect human and environmental health, upholding human rights for current and future generations, and respecting planetary boundaries.
- Prioritize the reduction of plastics and expand the implementation of reuse systems rather than

relying on recycling, bio-based, biodegradable, compostable plastics, and non-plastic alternatives.

- Establish transparency standards that include a complete identification, elimination, and traceability of chemicals, including polymers, that are hazardous or of concern, across the full lifecycle of plastics to regulate these chemicals by group based on the no data no market principle.
- Eliminate highly problematic plastic products and materials.
- Develop and implement tailored measures to prevent microplastic pollution at source and across the full lifecycle of plastics, including alternatives and substitutes.
- Apply the zero waste hierarchy, applying the prevention and precautionary principles to chemicals, polymers, and plastic products and their alternatives and substitutes across their full lifecycle, and prohibit waste management technologies and systems assessed as unsafe, unsustainable, non-transparent, and non-essential by an independent expert subsidiary body of multi-stakeholders under the instrument.
- Include a strong financial mechanism that adheres to the zero waste hierarchy to facilitate the flows of financial resources from the developed to the developing world, particularly for Small Island Developing States (SIDS) and Least Developed Countries (LDCs).
- Establish a multistakeholder science-policy interface (including rightful knowledge holders and socio-economic expert groups) as a subsidiary body of the instrument established with the support of a robust conflict of interest policy.
- Establishment of a Global Fund to pool resources from governments, NGOs, and businesses, dedicated solely to initiatives targeting plastic waste reduction.
- Public-Private Partnerships (PPPs) between public entities and private companies to combine resources and expertise to tackle plastic pollution.
- Targeted Financing Mechanisms to create specialized funding streams aimed at specific regions or projects, ensuring that the unique needs of different communities are addressed.
- Standalone obligations that establish standards to encourage sustainable waste management of aquaculture gear and the needed technologies to recover this lost, dumped equipment.

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