

The Plastic Bicycle Model



Riding the circularity track: the two-wheel model for a science-based and cooperative approach to solving the plastic pollution crisis

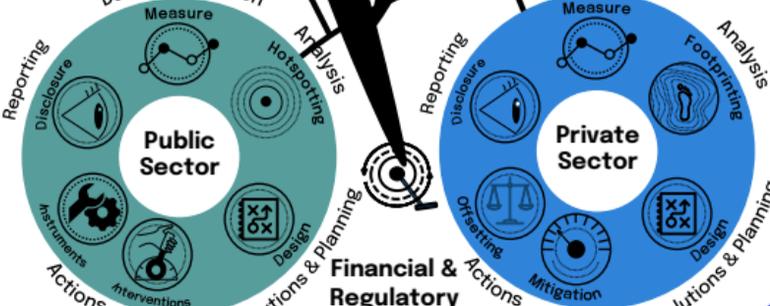
To function optimally, a bicycle requires the proper alignment of a strong frame, harmonized wheels, and effective gears, along with a knowledgeable and capable rider.

Data & Knowledge Exchange Mechanisms



In the same way, addressing the plastic pollution crisis requires strong collaboration and cohesion between different stakeholders in the private and public sectors, powered by high-quality data and constant knowledge exchange, along with the consistent support of critical mechanisms.

Only the synchronous operation of all components will ensure pollution is reduced and a path to circularity is secured.

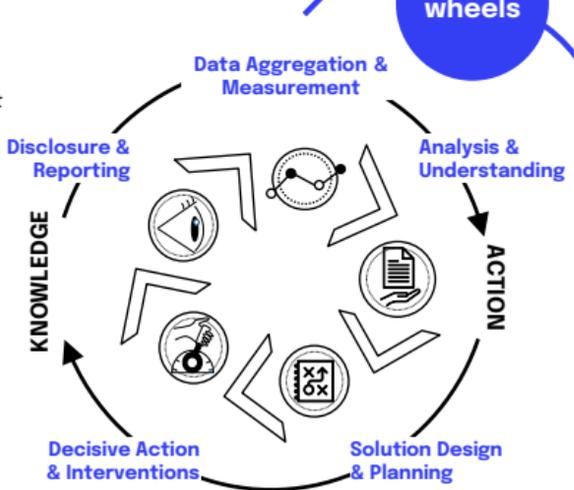


Financial & Regulatory Mechanisms

The wheels

The Public and Private Sectors share responsibility for tackling the issue of plastic pollution. But they cannot act in a disconnected manner.

In sync, like the wheels of a bicycle, each sector must move through coordinated rotations of generating data and knowledge and executing critical actions to better manage and reduce plastic waste.



Private Sector: all entities whose operations involve plastic in manufacturing, distribution or transport

- Establish **baselines** for entire product portfolio and company value chain
- Aggregate key metrics including **material inputs and fate at end of life** (collection, waste management and leakage)
- Ensure data coverage across all markets
- Transform data into **actionable insights**
- Create a plastic **footprint** of the product portfolio and/or all operations involving plastics
- Analyze footprint, identify **priorities for mitigation**
- Clarify fate at end of life across portfolio
- **(Re)design** products, packaging, distribution methods and other operations to mitigate problematic plastic usage across product life-cycle
- Drive pollution solutions by **prioritizing** considerations for end of life, waste management and leakage mitigation
- **Incorporate circularity** in all design decisions and **optimize for recyclability**
- **Mitigate footprint across value chain:** reduce plastic usage, implement re-use schemes, increase recycled materials use, improve fate at end of life, and ensure recyclability
- **Extend effort beyond the value chain:** participate in and support EPR mechanisms, other offsetting schemes and financing initiatives. Partner with public sector and other stakeholders to further mitigate footprint, positively influence responsible product use, ensure proper disposal and drive circularity initiatives
- **Disclose** impact, efforts and results
- **Report** key metrics across and beyond value chain; waste generation, waste mismanagement along own value chain, circularity, mitigation, offset volumes etc.
- **Practice transparency**, the gateway to accountability and progress on plastic pollution reduction



Public Sector: governing regulatory bodies at national and sub-national levels

- **Collect / request data** from private sector on plastic flow, waste management and leakage, to establish a baseline
- The baseline should cover land, water and air
- Transform data into **actionable insights**
- **Analyze** polymers, applications, industrial sectors, or waste management processes that result in leakages
- **Identify hotspots** with the highest plastic pollution levels. Seek to pinpoint the most problematic formats or polymers, geographical areas or other features that result in waste mismanagement
- **Evaluate** effectiveness of waste management systems and regulatory initiatives
- **(Re)design** waste management systems and processes; update or create appropriate instruments for influencing the needed system changes
- Incorporate local context and **circularity** into design decisions
- **Execute meaningful and measurable interventions** in collaboration with private sector to mitigate pollution in identified hotspots
- Activate **instruments** for practical implementation of interventions (regulatory, financial or informational measures)
- Publicly disclose **data about plastic fate** at end of life, waste flows, report on mitigation efforts
- Help private sector and citizens gain **a clear understanding** of the available infrastructure for effective plastic waste management and pollution mitigation
- **Report key indicators** across national, regional and local levels



The gears

The two wheels are connected and **propelled** by the bicycle's gears: that is, the Financial and Regulatory Mechanisms (EPR schemes, credits, and voluntary initiatives, etc.)



These mechanisms enable the private sector to provide funding for the development of necessary public infrastructure, which leads to **better management** of plastic waste. This is essential to drive actions toward circularity and reduced pollution

- With Extended Producer Responsibility (EPR) mechanisms, for example, environmental impacts are minimized:
- Manufacturers and importers bear the costs for the environmental impacts and end of life treatment of their products
 - Producers accept **legal, physical and socio-economic responsibility** for impacts that cannot be eliminated by design
 - **Responsibility for the product and its components is assumed from the time of product design** through the entire lifecycle, including the product's end of life

The frame & rider

A bicycle without a stabilizing frame and a capable rider will not move. The frame holds the entire bicycle together, while the rider keeps the bicycle upright, balanced, together and moving forward. Thanks to **quality data** and **knowledge exchange mechanisms**, the momentum of the plastic bicycle is maintained, obstacles are identified, and tracking progress becomes possible.



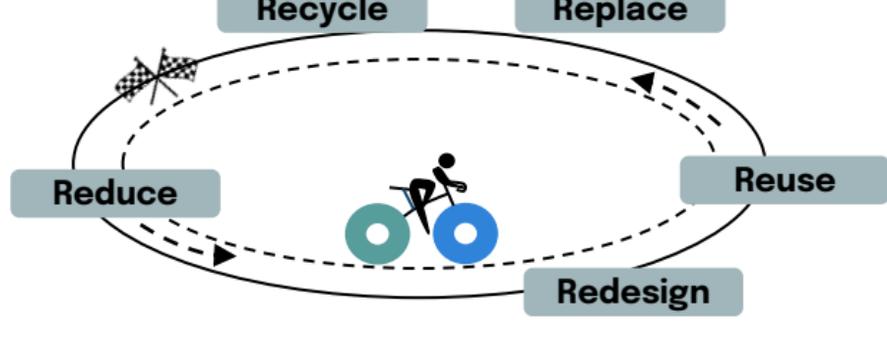
It follows that the **keys to solving the plastic pollution crisis** are more **transparency** and expanded **metrics** from all sectors around **plastic use** and **plastic waste management**.

Cracking the code of **plastic data transparency** is both **about getting the science right** (methodology) and **defining the appropriate processes for disclosure** (governance).

The track

Circularity is the **optimal track** for the Plastic Bicycle; it allows for value retention in production and consumption, minimal initial extracted value and minimal waste, and extended product life-cycles. Evaluating the necessity of a product at the outset to decrease material expenditures is also a key aspect of circularity.

Driving the circularity track means **incorporate the "R" practices** including redesign, reduce, replace, and reuse, but also refurbish, repair, and recover.



As illustrated in the bicycle model, **synergized wheels** (public sector and private sector), a **stabilizing frame and rider** (data & knowledge exchange mechanisms), and **functioning gears** (financial and regulatory mechanisms), will enable **successful navigation** of the circularity track and drive the necessary progress to reduce pollution levels globally.

Join the ride and find out more about solutions to address the plastic pollution crisis at www.plasticfootprint.earth