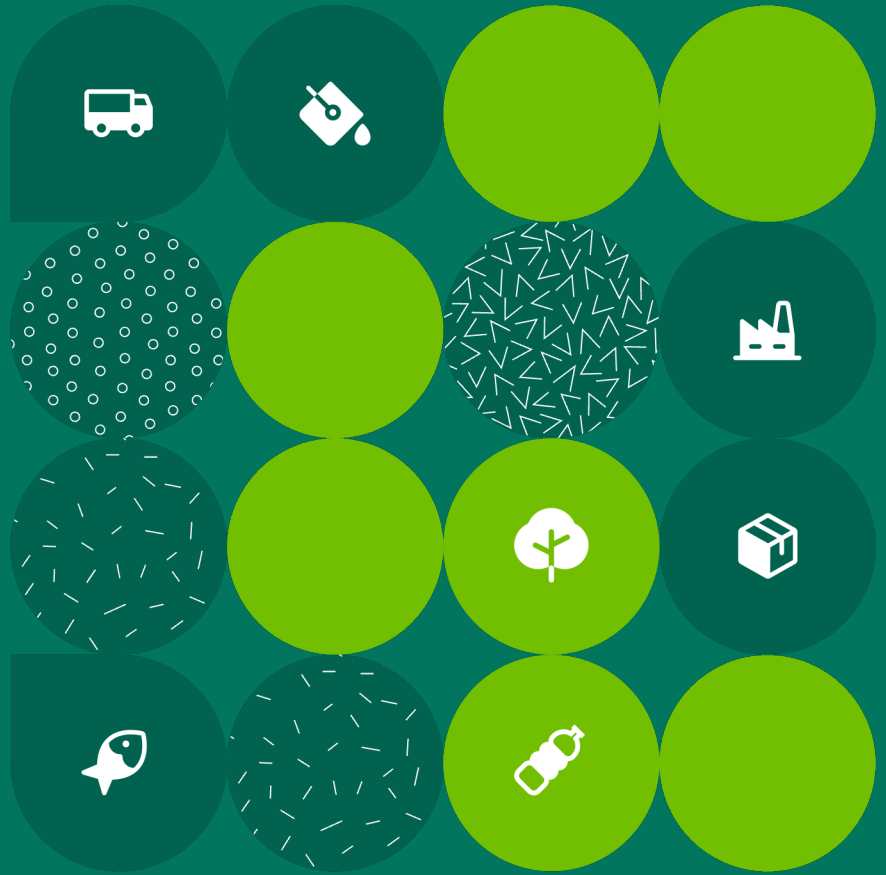
Plastic Footprint Network

Plastic Footprint Mitigation Accounting

Plastic Pollution Mitigation Action Framework (PAF)



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Setting the stage for credible plastic pollution mitigation accounting

Plastic pollution is one of the defining environmental challenges of our time. While companies are increasingly measuring their plastic footprints, a major gap remains: the ability to credibly account for mitigation actions–what is actually being done to reduce plastic leakage into the environment.

This framework is a first step toward filling that gap. It provides a structured methodology to help companies categorize and quantify their interventions, from plastic reduction and infrastructure improvements to cleanups and recovery innovations.

But this is just the beginning. Plastic mitigation accounting is an evolving field, and this framework will need to adapt as new data, methodologies, and regulatory landscapes emerge.

At Earth Action and the Plastic Footprint Network, we believe that transparent, science-based accounting is key to accelerating meaningful action. By applying and refining this framework, we can move toward a future where plastic mitigation is measurable, comparable, and scalable–just as carbon accounting has evolved for climate action.

We invite companies, researchers, and policymakers to contribute, challenge, and improve this methodology so that together, we can drive real, lasting change in the fight against plastic pollution.

Julien Boucher & Sarah Perreard
Co-Founders of the Plastic Footprint Network & Co-CEOs of Earth Action

Introduction of the Plastic Footprint Network

Leading organizations have united within the Plastic Footprint Network to chart a new, more effective path toward plastic pollution mitigation.

The network's first priority was unifying the framework for measuring plastic leakage into a single, science-based methodology for organizations to accurately assess the environmental impact of their plastic use. Over 100 professionals from 40+ organizations collaborated to establish the methodology, consisting of 11 modules, all optimized for usability and delivery of actionable results.

Objectives

Unifying the methodologies and perspectives of leading scientists, experts, and global practitioners. PFN enables organizations to understand the full impact, or footprint, from the use of plastic in their companies, products, and services.

1. Update and unify plastic footprinting methodologies
2. Ensure consistent use of the methodology by practitioners
3. Disseminate and scale the use of plastic footprinting
4. Explore how mitigation actions can be effectively measured and prioritized

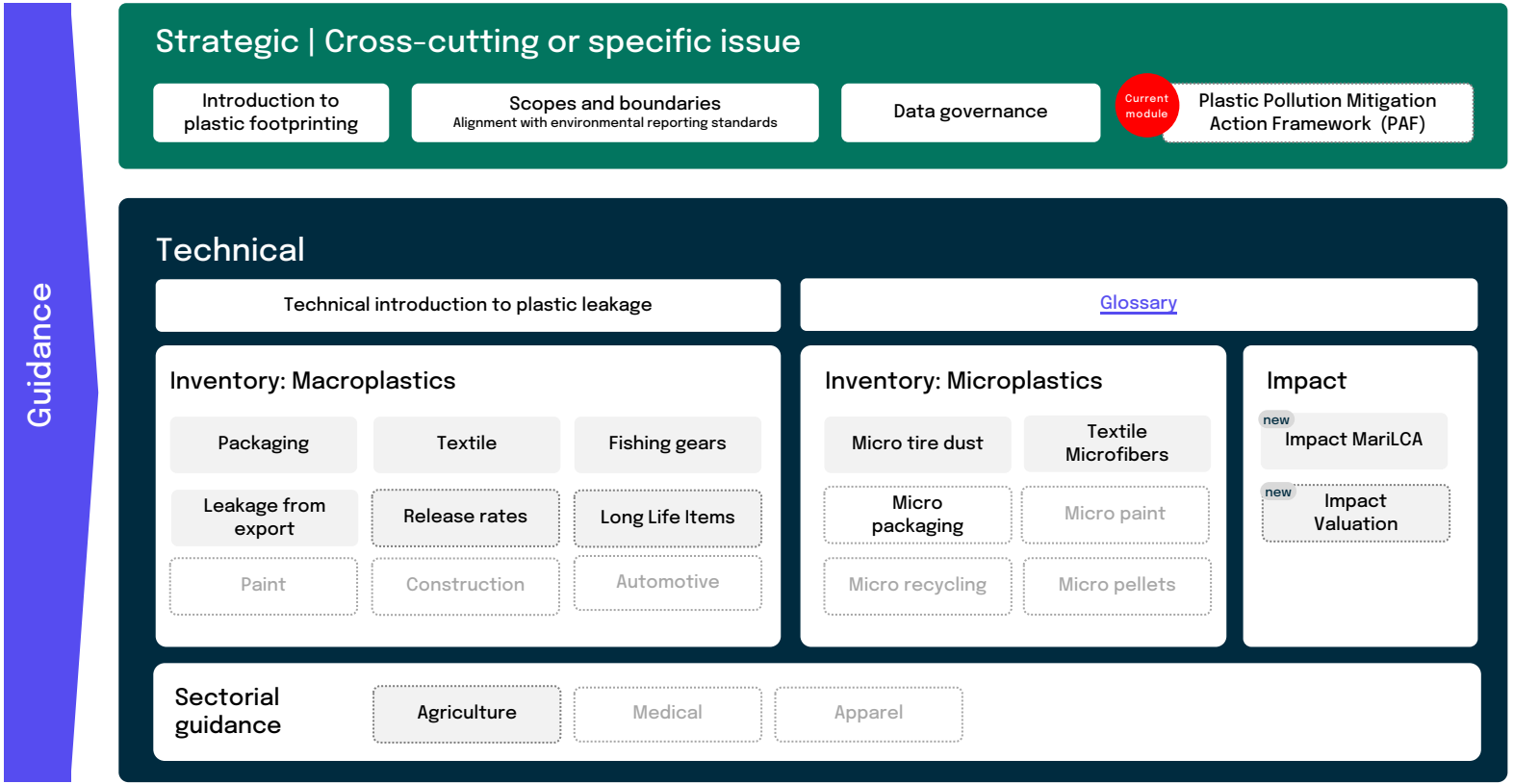
What will you find in this module?

The objective of this module is to introduce a structured approach to reducing plastic pollution through targeted mitigation actions. It provides a framework to assess, categorize, and measure interventions that help prevent plastic leakage into the environment.

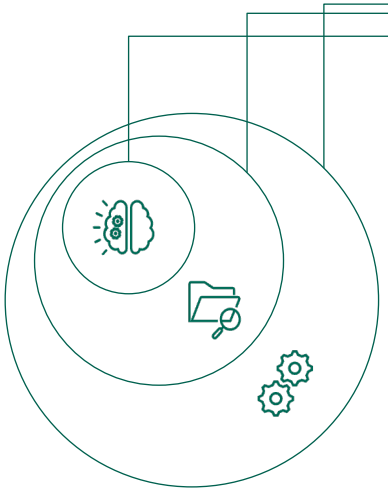
1. Why is plastic mitigation needed?
2. What are the key pillars of plastic mitigation?
3. How do we measure the impact of mitigation actions?
4. How can organizations integrate mitigation strategies into their operations?

At the end of this module, users will understand how to structure and measure plastic mitigation efforts, ensuring actions contribute meaningfully to reducing plastic pollution.

Where does this module fit in the PFN landscape?



Structure of the module



1 Context

Why this framework exists.
Where it fits.
What inspired this framework.

Target audience: busy reader, scientific journalist

2 Framework Logic

What is the overall approach of the framework.
What is the scope of the framework.

Target audience: scientist, expert

3 Detailed Guidance per Action Type

How should each action be implemented and accounted for?
What are the eligibility criteria, examples, and accounting links for each action type?

Target audience: practitioners aiming to assess a plastic footprint.

Reading keys: Main take away | Supporting information | Key warning

Part. 1

Context

Why does this framework exist?
Where does it fit?
What inspired this framework?

The missing piece in corporate plastic pollution

The Plastic Pollution Crisis

Over 11 million tons of plastic enter the ocean each year – set to triple by 2040 without intervention.

Pollution spans the full lifecycle: production, use, and end-of-life.

Leakage (plastic escaping managed systems into the environment) causes irreversible harm to ecosystems and communities.

Microplastics are now found in air, water, food, and even human blood – becoming a direct health threat.

The missing piece – the gap in corporate accounting

- Companies already track carbon footprints and set science-based climate targets.
- Many also track circularity through frameworks like the Ellen MacArthur Foundation (EMF) Global Commitment or the Global Circularity Protocol (WBCSD), which focus on recycled content, reuse, and designing for recyclability.
- But no consistent framework exists to account for how corporate actions directly reduce plastic leakage.
- This accounting blind spot means:
    - Leakage reduction is under-reported and undervalued.
    - Companies lack clear methodologies to set credible leakage reduction targets.
    - Investors, regulators, and stakeholders cannot compare or evaluate performance consistently.

The role of the Plastic Pollution Mitigation Action Framework (PAF)

- First-ever structured guide for companies to categorize, account for, and report plastic leakage mitigation actions.
- Provides a clear taxonomy of actions – so companies know what counts, how to account for its impact, and what to prioritize.
- Fully compatible with PFN Plastic Footprint methodology – so mitigation is directly linked to footprint results.
- Enables credible, science-based target setting for plastic leakage reduction – closing the accounting gap.

How the PAF framework supports corporate stewardship and risk management

- Leakage mitigation is not just operational – it's part of corporate risk management, regulatory compliance, and license to operate.
- Investors increasingly demand full-spectrum environmental disclosure.
- With the UN Treaty and overall regional regulatory increase, corporate plastic leakage accounting will likely become mandatory – this framework helps companies get ahead of regulation.

Why companies need the PAF: the business case for plastic mitigation accounting

Plastic leakage is no longer just an environmental issue – it is rapidly becoming a strategic, financial, and reputational risk.

- Litigation risk is real: 66 active lawsuits in the U.S. challenge misleading “recyclable” or “ocean-bound” plastic claims – showing that plastic disclosure is becoming a legal exposure area.
- Regulatory pressure is mounting: Plastic indicators are being integrated into CSRD, TNFD, CDP Plastics, and the UN Plastics Treaty – mandatory leakage disclosure is on the horizon.
- Scientific evidence is converging: New research links plastic leakage and microplastic exposure to ecosystem degradation, food-chain contamination, and human health impacts, setting the stage for future liability and cost internalization.
- Investor scrutiny is rising: Asset managers increasingly view unmanaged plastic leakage as a sign of weak environmental governance – similar to early carbon risk perception.

> *PAF gives companies the same accountability logic for plastic leakage that carbon accounting provides for climate, turning a growing liability into a manageable, reportable, and improvable metric.*

The Plastic Pollution Mitigation Action Framework (PAF) enables organizations to:

- Quantify and manage exposure – measure where plastic losses create environmental, regulatory, and financial liabilities across the value chain.
- Demonstrate credible action – link mitigation investments to measurable leakage reductions using science-based accounting.
- Respond to stakeholder scrutiny – provide defensible, verifiable data to investors, regulators, and consumers.
- Unlock value creation – innovate through efficiency, alternative materials, and circular business models aligned with future compliance needs.

Where the PAF framework takes inspiration from

In climate action, companies have access to a well-developed ecosystem of accounting and target-setting tools:

Inspiration	What we borrowed	How it applies to plastic leakage
GHG Protocol	Scope 1, 2, 3 logic	Adapting for plastic leakage (inside/outside value chain)
Net Zero Initiative (NZI)	Direct vs systemic action	Inside vs outside value chain logic
PFN Plastic Footprint	Leakage measurement	Ensuring direct compatibility and providing the assessment methodology
Waste Hierarchy	Reduce first	Core prioritization logic
WWF Blueprint	Credibility principles	Transparency, ambition, accountability

Circularity vs. leakage reduction complementarity and difference

Bridging the Gap: How Circularity & Leakage Reduction Work Together

- Circularity keeps plastic within a managed system, reducing demand for new plastic.
- Leakage reduction ensures that even existing plastics do not escape into the environment.
- Both are necessary–circularity conserves resources, while leakage reduction conserves nature.

How PAF Complements EMF Global Commitments:

- The EMF Global Commitments are widely used for corporate circularity targets.
- PAF provides the missing piece: an accountability framework to track and measure leakage reductions alongside circularity goals.

Aspect	Circularity	Plastic Footprinting
Initiatives focus	Ellen MacArthur Foundation's Global Commitment, CTI, MCI	Plastic Footprint Network's plastic footprint methodology & PAF
Primary Goal	Reduce virgin plastic use, promote reuse, and recyclability	Prevent plastic from leaking into the environment
Key Strategies	Increase recycled content, reuse models, eco-design	Waste prevention, infrastructure improvements, legacy pollution resolution
Accounting Focus	Material flow (e.g., % recycled content)	Environmental impact (e.g., leakage reduction, plastic recovery)
Measurement Gap	Does not track whether plastic stays in the system or leaks	Provides accountability for leakage outcomes

Connection to Existing Systems

How the PAF Framework Complements Existing Plastic Work

The PAF framework is designed to complement, not duplicate existing plastic and circularity tools. It fills the missing link: a structured, transparent, and science-based method for companies to account for and report on their plastic leakage mitigation actions.

- PFN Plastic Footprint Methodology: the PAF framework defines the action layer – how to account for reductions in plastic leakage after calculating a baseline footprint.
- MCI (Material Circularity Indicator) and CTI (Circular Transition Indicator): These indicators focus on circularity, meaning they measure how well plastic stays in the loop through recycled content, reuse, and recycling rates.
  PAF adds the missing focus on leakage reduction – ensuring that circular plastic is actually staying in the loop rather than leaking into the environment.
- Waste Hierarchy: the PAF framework reinforces the waste hierarchy – prioritizing reduction first, followed by reuse, recycling, and only then recovery.
- 3R Guidelines for Corporate Plastic Accounting: The PAF offers an accounting framework with structured mitigation pillars with an explicit focus on leakage reduction.
- UN Plastic Treaty (in development): While the treaty will set national leakage reduction targets, PAF provides companies with a practical approach to demonstrate credible contribution to those future targets.

Connection to existing systems

How the PAF Framework can support Policy Implementation

The PAF framework can serve both as a stand-alone and policy-aligned tool where beyond value chain mitigation actions:

- Mobilize outcomes-based finance to close waste management infrastructure gaps
- Support high-integrity collection and recycling in underserved regions
- Establish monitoring, reporting, and verification systems that governments can adopt
- Pilot operational models that inform future EPR design

Beyond value chain impact is delivered in the short term while accelerating the transition to mature, locally grounded EPR systems.

How PAF builds on PPWR, EPR & RAM reporting

Using what companies already track, and making it actionable for leakage mitigation

> The PAF framework complements, rather than duplicates, compliance reporting. Companies already collecting data for PPWR, EPR, or RAM can use these same inputs to quantify and manage leakage.

Compliance framework	What it provides	How PAF builds on it
PPWR (Packaging & Packaging Waste Regulation)	Material & format data; recyclability requirements	Converts recyclability data into leakage risk indicators and mitigation potential (A2–A4 actions).
EPR reporting	Tonnage placed on market, collected, and treated	Forms the baseline flow for leakage accounting; PAF distinguishes compliance vs. additional impact.
RAM (Recycling and Material data) / National material flow reports	Polymer- and country-level waste management data	Links to Plasteax / Packaging Data Hub end-of-life data and PFN leakage factors for quantifying mismanagement and leakage.

Climate and plastic: a parallel

In climate action, companies have access to a well-developed ecosystem of accounting and target-setting tools:

Climate action	Plastic pollution action
GHG Protocol – Defines how to calculate a carbon footprint across Scopes 1, 2, 3.	PFN Plastic Footprint Methodology – Defines how to calculate a plastic footprint across Scopes 1, 2, 3*.
Science-Based Targets initiative (SBTi) – Provides methods for companies to define and implement science-based emission reduction targets in line with climate science.	No equivalent science-based target-setting framework exists yet for plastic leakage. The PAF framework provides a structured approach to categorizing actions, but further development is needed to establish quantitative reduction targets aligned with science. Future iterations should define measurable pathways for leakage reduction, similar to sectoral pathways in climate action.
Net Zero Initiative (NZI) – Defines inside vs outside value chain actions, and distinguishes between direct reduction measures and those enabling systemic change.	The PAF framework adapts this logic to plastic leakage, providing companies with clear rules for categorizing actions and distinguishing between direct (attributional) and indirect (consequential) reductions.

**** Plastic Footprint Network Scope & Boundaries module, PFN 2023***

Part. 2

Framework Logic

What is the overall approach of the framework?
What is the scope of the framework?

What the PAF framework does

From Actions to Accounting

At its core, the PAF framework gives companies a structured way to:

- Categorize plastic leakage mitigation actions. → *What type of action is it?*
- Link actions to the company's plastic footprint. → *How much leakage does this action prevent or remove?*
- Track progress over time. → *How much leakage reduction has been achieved?*
- Report using a clear, standardized logic. → *Enabling comparability across companies and sectors*

Plastic Pollution Mitigation Action Framework (PAF)

The 2 levers to mitigate plastic pollution

Reduce plastic leakage entering the environment

Recover leaked plastic from the environment

The 3 pillars of the mitigation framework

Pillar A **REDUCE** leakage in my scopes 1,2 & 3 - attributional reductions

Pillar B **AVOID** leakage by influencing other systems - consequential reductions

Pillar C **RECOVER** leaked plastic from the environment

		Pillar A	Pillar B	Pillar C
WITHIN MY VALUE CHAIN	Material Flow Reduction	A1a Reduce Quantity of Plastic in Products & Portfolios (e.g., product phase-out, lightweighting) A1b Reduce Quantity of Activities Responsible for Leakage (e.g., less driving)	B1 Develop Products / Services that Enable System-wide Leakage Reduction (e.g., develop reusable packaging)	C1 Direct Cleanup of Facility-Origin Plastic Leakage (e.g., factory surroundings)
	Product & Material Design Improvement	A2 Product Redesign to Improve System Fit (e.g., mono-material packaging)	B2 Material Sourcing to Drive Circularity (e.g., commit to recycled content)	
	Operational Infrastructure Improvement	A3 Infrastructure Improvement to Reduce Leakage in Own Operations (e.g., implementation of collection schemes in own stores, pellet loss prevention)	B3 Develop Technologies to Prevent Leakage (e.g., develop advanced filtration)	C3 Fund Plastic Recovery Activities (e.g., verified outcomes-based waste prevention, NGO programs)
OUTSIDE MY VALUE CHAIN	Systemic Infrastructure Support	A4 Fund Value Chain Waste Systems (e.g., funding waste infrastructure development)	B4 Fund Infrastructure for System-wide Plastic Reduction (e.g., fund community reuse hubs)	C4 Fund Emerging Recovery Technologies (e.g., fund microplastic capture)

The 3 pillars – different types of mitigation actions

Pillar	What it means	Example of actions
Pillar A – Reduce leakage in my scopes 1, 2 & 3	Attributional reductions: Actions taken within the company's value chain to reduce plastic leakage directly. Reduce plastic flows, improve product design and infrastructure to lower leakage risks directly.	- Reducing the quantity of plastic in products (lightweighting, material substitution). - Reducing the quantity of leakage-prone activities (e.g., reduced washing of textiles). - Product redesign to fit better into collection systems. - Infrastructure improvements within own facilities (e.g., better waste segregation, improved wastewater treatment). - Developing reuse or refill offerings to reduce plastic use in own products
Pillar B – Avoid leakage by influencing other systems	Consequential reductions: Actions outside the company's direct value chain, aimed at influencing external systems to prevent plastic leakage. This can involve offering new products/services, financing system improvements, or driving policy change.	- Fund system-wide reuse infrastructure. - Acting as a market incentive for more recycled content. - Supporting the development of improved waste management technologies (sorting, filtration). - Financing external infrastructure (waste collection, recycling).
Pillar C – Recover plastic already leaked	Actions that remove plastic already leaked into the environment. This does not prevent leakage but helps remediate past leakage.	- Financing clean-up activities. - Organizing direct cleanups. - Funding third-party cleanup programs/technologies. - Funding innovations in capture technologies.

Attributional reductions in external infrastructure: Clarifying A4

Why A4 is considered "outside operations" yet attributional

Actions under A4 involve improving waste or wastewater infrastructure that handles the company's products post-consumer – such as municipal waste collection systems or shared wastewater treatment plants. While these infrastructures are not owned or operated by the company, they treat material that is part of its Scope 3 footprint (e.g., end-of-life treatment of sold products).

Because the leakage reduction can be directly traced to the company's plastic flows, these interventions are attributional, even if they take place outside the company's physical boundaries.

Key Criteria for A4 Eligibility

- ✓ The system must handle plastic flows directly attributable to the company.
- ✓ There must be a clear allocation logic for quantifying the associated impact.
- ✓ The investment must result in a verifiable reduction in plastic leakage from the company's Scope 1, 2, or 3 footprint.

Distinguishing A4 and B4 in Shared Investments

When investing in shared systems (e.g., a facility that handles waste from multiple companies):

- The portion of the infrastructure that manages the company's own plastic flows can be reported under A4 (attributional), using allocation methods (e.g., share of volume or throughput).
- Any additional portion that manages waste from other sources (not traceable to the company's footprint) may be reported under B4 (consequential).

This distinction helps prevent double counting and ensures credible attribution of plastic leakage reductions.

Example from greenhouse gas accounting:

This follows the same logic used in greenhouse gas accounting: companies can claim Scope 2 emission reductions through renewable energy procurement (guarantees of origin), even if they don't own the energy infrastructure – as long as the benefit is clearly linked to their operational footprint.

Inside vs outside the value chain

PAF recognizes that companies act at different levels:

Action Type	What it means	Attributional ?	Example
Within my value chain	Direct operational control – actions related to products, operations, or supply chains.	Yes	Redesign product to remove unnecessary plastic.
Outside my value chain	Systemic influence – indirect influence through infrastructure or partnership	• Yes if managing company waste • No if managing general system	• Fund local waste treatment for your own product = A4 • Fund waste systems in other markets = B4

Clarification: Attribution depends on whether the intervention directly reduces the company's own plastic footprint, not just on its physical or geographic location.

Key Principle – Leakage reduction is a combination of both.

Every credible corporate leakage reduction strategy will need a mix of:

- Direct interventions in products and processes (inside value chain).
- Support for systemic change in markets and waste infrastructure (outside value chain).

Advocacy & policy as an enabler

Advocacy and policy engagement play a critical role in scaling plastic mitigation actions. While not a direct intervention in this framework, advocacy supports systemic change by:

- Strengthening EPR schemes and regulatory incentives for waste management.
- Promoting bans or taxes on high-risk plastic products.
- Standardizing eco-design and recyclability requirements.
- Encouraging government and industry-wide commitments to leakage reduction.
- Supporting global regulatory frameworks, such as engagement in the Business Coalition for a UN Plastic Treaty to align corporate action with emerging international policies.

Why is advocacy not part of this framework?

While essential, advocacy is not directly measurable in terms of plastic leakage reduction, and its outcomes depend on external policy decisions. This framework focuses on measurable, direct interventions with quantifiable impact. However, advocacy remains a key enabler by shaping the regulatory, financial, and market conditions necessary for scaling corporate mitigation efforts.

Part. 3

Detailed guidance per action type

How do we use plastic footprint?

Prioritizing high-impact plastic mitigation actions (1/2)

To maximize impact, corporate actions should align with their contribution to reducing plastic pollution. Scientific research (Breaking the Plastic Wave (BTPW) and Towards Ending Plastic Pollution) highlights that the most effective measures focus on reducing plastic use and improving waste management. While these reports analyse system-wide impacts, the Plastic Action Framework (PAF) categorizes actions based on who implements them and whether they reduce a company's footprint or drive broader systemic change. Despite this distinction, these best-in-class mitigation scenarios provide clear and credible guidance for prioritizing corporate efforts.

BTPW estimates that 47% of total reduction in plastic pollution should come from reducing plastic use and new material needs.

43% would come from preventing mismanagement through improved waste capture, sorting, and infrastructure.

10% residual mismanaged waste.

This breakdown informs corporate mitigation efforts: companies should first focus on direct reduction, contribute to system-wide improvements and allocate only a limited portion to post-leakage recovery.
Sectoral pathways may differ. To be used for directional system priorities only.

Prioritizing high-impact plastic mitigation actions (2/2)

1

First, reduce plastic use & need for new material (Pillar A & B)

Impact: Eliminating unnecessary plastics, scaling reuse models, and improving product design can cut global plastic pollution by up to 45% by 2040, preventing over 140 Mt of plastic waste annually.

Outcome: Corporate actions should prioritize direct reduction, material substitution*, and infrastructure for reuse, refill, and alternative materials.

Solution contribution: ~47% of total reduction in plastic pollution (30% eliminate/reuse + 17% substitute), or ~60-100 Mt annually.

2

Then, prevent leakage (Pillar A & B)

Impact: Expanding collection, sorting, and containment infrastructure can prevent up to 80% of plastic waste from becoming mismanaged, reducing over 110 Mt of annual plastic leakage risk.

Outcome: Companies should support interventions that prevent mismanagement within their supply chain and contribute to broader system improvements.

Solution contribution: ~43% of total reduction (20% recycle + 23% disposal), or ~50-80Mt annually.

3

Finally, recover leaked plastic (Pillar C)

Impact: Even with full mitigation efforts, 7 Mt of plastic leakage per year is projected by 2040, requiring targeted recovery efforts.

Outcome: Plastic cleanup and remediation efforts are necessary to address past leakage but should not be prioritized over prevention.

Solution contribution ~10% of total reduction (mismanaged waste recovery), or ~10-20 Mt annually.

Source: Adapted from Breaking the Plastic Wave (Pew & SYSTEMIQ, 2020), Towards Ending Plastic Pollution (Systemiq, 2023)

*Material substitutions should be assessed using life-cycle thinking to avoid unintended environmental tradeoffs. Sectoral pathways may differ. To be used for directional system priorities only.

Ensuring additionality in plastic pollution mitigation actions

What is additionality?

Additionality ensures that a plastic mitigation action leads to reductions beyond what would occur anyway. An action is additional if it would not have happened without specific intervention or funding.

Key Criteria for Additionality:

- ✓ Beyond regulatory compliance: The action must go beyond what is legally required (e.g., funding voluntary cleanup efforts vs. mandatory waste fees).
- ✓ Not already captured in the plastic footprint baseline: The action must represent a new intervention, not something already factored into footprint calculations.
- ✓ Drives real systemic change: Investments must create new capacity, infrastructure, or incentives that enable leakage prevention, rather than just shifting responsibility.

The Role of Impact Accounting in Additionality

- **Verifiable impact matters** – Whether funding activities directly (e.g., supporting an NGO) or purchasing recovery credits, companies must apply impact accounting methodologies to prove additionality. This ensures that actions are measurable, transparent, and not double-counted in compliance-based systems.
- **Credit-based approaches** – If using plastic recovery or recycling credits, companies must ensure third-party verification and proof of additional impact, ensuring the credit represents genuine new plastic recovery beyond what would happen otherwise.

For guidance on conducting additionality checks for regulatory surplus, financial additionality and common practice analysis, you may refer to Verra's Plastic Standard.

Note: Additionality should not come at a cost of displacing informal sector income nor at the cost of negative social or environmental impact (such as air pollution).

Ensuring additionality in plastic pollution mitigation actions

Examples of additional actions:

- ✓ Investing in new infrastructure to capture previously uncollected plastic.
- ✓ Developing refillable packaging models that displace single-use plastics.
- ✓ Funding third-party cleanups in high-leakage regions where no formal systems exist.

Examples of non-additional actions:

- × Paying standard Extended Producer Responsibility (EPR) fees that fulfil compliance requirements or do not lead to demonstrable improvements in collection outcomes. (* If a formal, mandatory EPR system is in place, paying EPR fees alone is regulatory compliance and does not qualify as additional. Where voluntary EPR contributions exist, additionality depends on whether the funding demonstrably improves collection and waste management outcomes beyond the baseline requirement.)
- × Claiming recycled content use when it does not incentivize new recycling capacity.
- × Reporting cleanups already required by compliance obligations.

Note: Additionality checks apply primarily to beyond value chain interventions, ensuring investments lead to real system-wide improvements. Corporate footprint reduction actions are inherently accounted for in plastic footprint exercises and do not require separate additionality proof.

Mapping actions to the pillars

Pillar A - Reduce Leakage in My Scopes 1, 2 & 3 (Attributional Reductions)

Action Box	What it means	Example
A1a – Volume Reduction	Reduce the quantity of plastic in products and portfolios.	Lightweighting packaging; eliminating unnecessary plastic components.
A1b - Activity Reduction	Reduce the frequency or intensity of leakage-prone activities – especially processes that lead to microplastic emissions or system losses.	Reduce washing cycles for textiles; reduce transport distances to lower tyre wear.
A2 - Product Redesign	Product redesign to improve system fit	Switch to mono-material packaging; improve textile design for lower shedding
A3 – Own Infrastructure Improvement	Improve internal processes and waste infrastructure to reduce leakage risk from operations.	Upgrade wastewater filtration at production sites; improve pellet containment and internal waste segregation.
A4 – Fund Value Chain Waste Systems	Invest in better waste or wastewater infrastructure directly linked to your supply chain or product markets – ensuring plastic from your products has a safe post-use pathway.	Fund new sorting equipment at a supplier's facility or co-finance wastewater microplastic filters in supplier regions.

Pillar A
Reduce Leakage

Pillar B
Avoid Leakage

Pillar C
Recover Leaked Plastic

Action code	A1a
Action name	Reduce Quantity of Plastic in Products & Portfolios
Description	Reducing the overall amount of plastic used in products and packaging by eliminating unnecessary plastic components, lightweighting, or shifting to more material-efficient designs.
Why it matters	Less plastic used means lower plastic footprint and reduced risk of leakage across the product's lifecycle, from production to disposal.
Examples	Lightweighting packaging to use less plastic per unit. Eliminating unnecessary plastic components (e.g., secondary caps, films, or shrink sleeves). Redesigning products to require less plastic overall without compromising function.
Eligibility criteria	Reduction must be quantifiable.
Evidence required	Product specifications showing before-and-after material intensity. Procurement or production data verifying the amount of plastic avoided.
Accounting link	Direct reduction in plastic footprint, contributing to lower Scope 3 upstream and downstream emissions.
Connection to PFN footprint methodology	Reducing the volume of material used directly results in a lower plastic footprint under the PFN methodology.
Common pitfalls	Replacing virgin plastic with recycled plastic – this is a circularity action, not a leakage reduction action. Removing plastic but increasing product failure rates, leading to unintended environmental consequences. Eco-design changes that reduce plastic use but hinder recyclability, potentially increasing leakage rates (e.g., moving to multilayer films that reduce thickness but make packaging non-recyclable).

Case Study: Single-Use Plastic Elimination

Company: Large Sports Equipment Producer

Project: Phase-out of all single-use plastic components across product lines.

Actionable Metric Outcome:

- **4% of total plastic output eliminated** by removing unnecessary plastic.

Plastic Leakage Outcome:

- Depending on the type of plastics phased out and their leakage rate with respect to the whole portfolio of the company, this may mean a leakage reduction in the range of 2%-6%.

Source: This case study is shown for demonstration purposes only, and all figures are illustrative.

Case Study: Material Optimization for Reduction

Company : Large Sports Equipment Producer

Project: Refining production processes to reduce plastic content per unit.

Actionable Metric Outcome:

- **4% reduction in plastic use per product**, ensuring sustainability without compromising quality.
- Improved material efficiency, reducing raw plastic demand.

Plastic Leakage Outcome:

- Depending on the type of plastics phased out and their leakage rate with respect to the whole portfolio of the company, this may mean a leakage reduction in the range of 2%-6%.

Source: *Evaluating Progress on Plastic Pollution Mitigation: Circularity & Plastic Footprint - A Case Study. Earth Action, 2024.*
Read the report here.

Pillar A
Reduce Leakage

Pillar B
Avoid Leakage

Pillar C
Recover Leaked Plastic

Action code	A1b
Action name	Reduce Quantity of Activities Responsible for Leakage
Description	Reducing plastic leakage by minimizing activities that contribute to plastic loss, such as washing, transportation, or friction-intensive processes that generate microplastics.
Why it matters	Certain activities increase leakage risk through wear, abrasion, or waste generation. Reducing these activities directly lowers plastic leakage.
Examples	Reducing industrial washing cycles to reduce microplastic fiber release. Optimizing logistics to minimize tire wear and microplastic emissions. Modifying production processes to reduce friction-related microplastic shedding.
Eligibility criteria	Action must demonstrably reduce plastic leakage from operational activities. Impact must be quantifiable and tied to specific activity changes.
Evidence required	Operational adjustments that show reduced plastic loss over time. Monitoring data on microplastic release rates before and after intervention.
Accounting link	Reduces Scope 1 and 3 leakage footprint by lowering activity-based plastic emissions.
Connection to PFN footprint methodology	Directly linked to microplastic leakage factors in PFN footprint calculations.
Common pitfalls	Shifting leakage elsewhere rather than truly reducing it (e.g., replacing washing with another high-leakage process). Claiming efficiency gains without proof of actual reduction in plastic loss.

Case Study: Localizing Supply Chains to Reduce Transport-Related Plastic Leakage

Company : Global Electronics Manufacturer

Project: Optimizing the supply chain to reduce transport distances, limiting the generation of microplastics from tire wear.

Actionable Metric Outcome:

- **30% reduction in transport kilometers** by shifting to regional suppliers for key components, thus decrease in tire wear particle emissions, a major contributor to microplastic pollution. In addition, this leads to reduced logistics-related emissions, improving sustainability metrics beyond plastic mitigation.

Plastic Leakage Outcome:

- It is estimated that around 323 mg of microplastics are released per km from heavy goods transport (see PFN methodology and data). This means that for **every 3,000 km reduced, we would be preventing 1 kg of microplastics from entering the environment**.

Source: This case study is shown for demonstration purposes only, and all figures are illustrative.

Action code	A2
Action name	Product Redesign to Improve System Fit
Description	Redesigning plastic products and packaging to ensure they are better suited for collection, sorting, and recycling within existing waste management systems.
Why it matters	Plastic products that are incompatible with recycling systems are often mismanaged and leaked into the environment. Optimized design reduces this risk and enhances material recovery.
Examples	Switching to mono-material packaging to improve recyclability. Removing problematic additives that hinder plastic processing. Designing products to align with standard collection & sorting infrastructure.
Eligibility criteria	Changes must reduce the risk of plastic mismanagement (not just improve recyclability); Modifications should align with real-world waste infrastructure (not just theoretical improvements). /!\ Only counts as leakage mitigation if implemented in a leakage-prone geography, and if design improvements or demand creation are shown to reduce leakage.
Evidence required	Product design documentation and material composition data. Waste system compatibility assessments showing improved collection or sorting potential.
Accounting link	Reduces Scope 2 downstream mismanagement rates, contributing to lower overall plastic leakage.
Connection to PFN footprint methodology	Directly influences post-consumer waste fate modeling in PFN footprint calculations.
Common pitfalls	Assuming recyclability equals mitigation–if infrastructure cannot process it, the redesign does not reduce leakage. Focusing only on recycled content–this is about design improvements for system fit, not just material sourcing.

Case Study: Eco-design for recyclability

Company : Global consumer good manufacturer

Project:
Transition from multi-layer flexible packaging (PET-PE laminates) to mono-material polyethylene (PE) pouches to improve recyclability and reduce mismanagement risk in key markets.

Actionable Metric:
100 % of flexible packaging lines converted to mono-material by 2026; verified 25 % increase in the share of packaging collected for recycling (based on Plasteax national data).

Outcome:
The company identified that its multi-layer pouches were not accepted in most national recycling streams and therefore showed a high Mismanaged Waste Index (MWI ≈ 0.40).
By switching to mono-material PE structures that *are* accepted in those systems, the company increases the proportion of its packaging entering managed waste streams (collection + recycling or incineration), thereby lowering the probability of mismanagement and subsequent leakage.
This redesign changes the *intrinsic leakage profile* of the company's own products – an attributional improvement captured within its Scope 3 (end-of-life) footprint.

Plastic Leakage Outcome:
Reduction in MWI from 0.40 → 0.25 (Δ = −0.15) in key markets.
Estimated leakage reduction = ΔMWI × packaging mass × release rate (country-specific).
If the company further funded external collection or recycling infrastructure, that contribution would instead count under Pillar B4 (Systemic Infrastructure Support).

Source: *Evaluating Progress on Plastic Pollution Mitigation: Circularity & Plastic Footprint – A Case Study. Earth Action, 2024.*
Read the report here.

Practitioners should verify country-specific MWI values and release rates at polymer / format level in the PFN / Plasteax / Packaging Data Hub dataset to substantiate leakage reduction claims.

Action code	A3
Action name	Infrastructure Improvement to Reduce Leakage in Own Operations
Description	Upgrading internal facilities and processes to prevent plastic leakage within company-owned operations.
Why it matters	Prevents direct leakage from manufacturing sites, wastewater discharge, or internal waste handling.
Examples	Installing wastewater microplastic filters in company-owned factories. Improving on-site plastic waste segregation to minimize mismanagement. Implementing pellet loss prevention measures in production sites.
Eligibility criteria	Action must directly prevent plastic leakage from company operations. Solutions must be implemented within company-controlled facilities.
Evidence required	Documentation of infrastructure upgrades and operational changes. Leakage prevention calculations (e.g., expected plastic retention rates).
Accounting link	Reduces Scope 1 or 2 leakage footprint from operations.
Connection to PFN footprint methodology	Direct impact on operational leakage factors (e.g., pellets, microplastics).
Common pitfalls	Claiming general waste handling improvements that do not explicitly prevent leakage. Relying on external facilities rather than fixing internal weaknesses.

Case Study: Upgrading Infrastructure to Reduce Microfiber Leakage

Company : A global fashion retailer

Project: Installing wastewater microplastic filters in company-owned factories.

Actionable Metric Outcome:

- Capture rate of microfiber leakage of 95-98% thanks to advanced wastewater filtration systems installed in production facilities.

Plastic Leakage Outcome:

- For a facility producing 100 kilotons of synthetic clothes, this would mean a reduction in microfiber leakage to the environment from around 30 tons to around 5 tons.

Case Study: Partnerships with recycling companies

Company : A luxury watchmaker

Project: Securing partnerships with local recycling companies to manage waste from own facilities.

Actionable Metric Outcome:

- Increase the recycling rate of plastic materials used in direct operations by 300%.

Plastic Leakage Outcome:

- Because of the higher recycling rate, less plastic is managed by national waste management systems, reducing the risk of mismanagement by 60%.

Source: *Inspired by client's projects - for demonstration purposes only.*

Action code	A4
Action name	Fund Value Chain Waste Systems
Description	Investing in waste and wastewater management infrastructure to ensure proper collection, sorting, and treatment of plastic waste within the company's value chain.
Why it matters	Expands and improves plastic waste handling capacity in supplier or consumer regions, reducing mismanagement and leakage risks.
Examples	Funding new waste sorting or treatment facilities. Investing in improved wastewater treatment to prevent microplastic leakage. Expanding collection coverage to capture more plastic waste from supply chain operations.
Eligibility criteria	Must enhance waste systems in regions directly linked to the company's plastic footprint. Must increase capacity, efficiency, or effectiveness in handling plastic waste.
Evidence required	Infrastructure project documentation (e.g., funding records, operational impact reports). Measurable improvement in plastic waste collection, sorting, or treatment.
Accounting link	Can reduce Scope 1 and 2 leakage by improving plastic waste management in key markets.
Connection to PFN footprint methodology	May improve regional waste mismanagement factors, leading to more accurate footprint modeling.
Common pitfalls	Claiming general industry-wide waste system improvements (this would fall under B3 or B4). Funding projects with no clear link to managing the company's own plastic waste.

A4 vs. B4 – Key Difference

A4 – Fund Value Chain Waste Systems

- Fixing waste infrastructure to properly handle plastic waste (e.g., expanding sorting, collection, or wastewater treatment capacity).

B4 – Fund Systemic Plastic Reduction

- Shifting away from plastic dependency by investing in reuse, refill, or alternative distribution models (e.g., community reuse hubs, returnable packaging systems).

Quick Check:

- If action improves waste collection/treatment → A4
- If action enables the replacement of plastic use entirely → B4

Using Outcome-Based Financing to strengthen waste systems

Investments in waste collection and treatment infrastructure can be tied to measurable reductions in mismanaged plastic using Outcomes-Based Waste Prevention (OBWP).

By linking funding to verifiable improvements in waste system performance, companies ensure their contributions lead to real leakage prevention.

Example:

A company funds waste treatment facility upgrades, with payments contingent on measured reductions in plastic leakage from the system.

Mapping actions to the pillars

Pillar B - Avoid Leakage by Influencing External Systems (Consequential Reductions)

Action Box	What it means	Example
B1 – Product/Service to Avoid Leakage	Develop products or services that reduce leakage risk at market level.	Launch a reusable packaging scheme to replace single-use plastic in key markets.
B2 – Material Sourcing to Drive Circularity	Integrate more recycled content into products, stimulating demand for recycling infrastructure.	Commit to using high-quality post-consumer recycled content in packaging.
B3 – System Innovation and Infrastructure Development	Contribute to the development of improved waste management technologies and infrastructure.	Support development of advanced sorting technologies; invest in microplastic filtration technology for wastewater.
B4 – Financing External Leakage Prevention	Invest in reuse, refill, or other plastic-free systems that reduce plastic demand across the whole market – not just for your own products, but to enable system-wide change.	Support avoidance-focused infrastructure in coastal areas.

Participation in mandatory EPR schemes does not qualify as a voluntary mitigation action under this framework. EPR fees reflect the regulatory baseline, and their effectiveness (or lack thereof) is already factored into the plastic footprint baseline. However, voluntary financing of additional system improvements can qualify under B4.

Action code	B1
Action name	Develop Products & Services that Enable System-wide Leakage Reduction
Description	Developing and promoting products or services that replace higher-leakage alternatives in the market, shifting consumption toward solutions that inherently reduce plastic leakage risks.
Why it matters	Leakage risk is not only linked to a company's own operations but also to the broader system of plastic use. By offering alternatives, companies can reduce leakage beyond their own value chain.
Examples	Developing reusable or refillable packaging systems that replace single-use plastic. Providing packaging-free delivery models that reduce plastic waste. Introducing product-as-a-service models that minimize plastic use in consumer goods.
Eligibility criteria	Must demonstrate a real shift from higher-risk plastic usage to a lower-risk alternative. Must provide clear market-based impact, not just an optional offering.
Evidence required	Market penetration data showing displacement of conventional plastic products. Verification that the alternative actually reduces system-wide plastic leakage.
Accounting link	Reduces Scope 3 downstream leakage factors by shifting market baselines toward lower-leakage options.
Connection to PFN footprint methodology	Aligns with consequential modeling, estimating system-wide impact of alternative products.
Common pitfalls	Providing an alternative but failing to scale it, leaving high-leakage products dominant. Claiming circularity benefits (e.g., recyclability) without evidence of actual leakage reduction.

Case Study: Eco-Design for Recyclability

Company : Large Sports Equipment Producer

Project: Increasing product modularity to allow dismantling, repair, and reassembly.

Actionable Metric Outcome:

- Portfolio share of repairable products rises from 25% in 2023 to 80% by 2040.
- Supports consumer adoption of repair services, reducing premature disposal.

Plastic Leakage Outcome:

- Leakage is reduced by extending product life cycles, preventing plastic from entering waste streams too soon.

Source: Inspired by *Evaluating Progress on Plastic Pollution Mitigation: Circularity & Plastic Footprint – A Case Study. Earth Action, 2024.*
For more details and to see an example with explicit numbers, read the report here.

Case Study: Repair Business Model

Company : Large Sports Equipment Producer

Project: Providing repair services for a range of consumer products, including non-company brands, to extend lifespan and prevent unnecessary disposal of plastic-based goods.

Actionable Metric Outcome:

- Expansion of repair services across global retail locations.
- Delays product end-of-life, reducing overall plastic demand.

Plastic Leakage Outcome:

- Leakage is reduced by extending product life, avoiding premature disposal and leakage risks.

Source: Inspired by *Evaluating Progress on Plastic Pollution Mitigation: Circularity & Plastic Footprint – A Case Study. Earth Action, 2024.*
For more details and to see an example with explicit numbers, read the report here.

Action code	B2
Action name	Material Sourcing to Drive Circularity
Description	Integrating recycled plastic into products as a demand signal for the recycling industry, increasing collection incentives and reducing mismanaged plastic.
Why it matters	Recycling systems function only if there is demand for recycled content. Increasing this demand strengthens the entire value chain, preventing plastic from being discarded or leaked.
Examples	Commitments to use a high percentage of recycled content in packaging; Redesigning products to ensure compatibility with existing recycling streams; Encouraging suppliers to prioritize secondary plastics over virgin materials.
Eligibility criteria	Must increase demand for post-consumer recycled plastic, not just industrial scrap; Must be tied to increased collection or reduced waste mismanagement. /!\ Only counts as leakage mitigation if implemented in a leakage-prone geography, and if design improvements or demand creation are shown to reduce leakage.
Evidence required	Material procurement records showing recycled vs virgin plastic use; Supply chain assessments verifying waste diversion through recycling integration.
Accounting link	Reduces Scope 3 leakage by diverting plastic into functioning recovery pathways.
Connection to PFN footprint methodology	Aligns with waste fate modeling, reinforcing demand-side interventions in plastic recovery.
Common pitfalls	Focusing only on recycled content percentages without ensuring real-world recovery of plastic waste; Using materials that are technically recyclable but lack collection infrastructure, leading to continued leakage.

Case Study: Increasing Recycled Input

Company : Large Sports Equipment Producer

Project: Progressively increasing recycled content in products, from 30% in 2023 to 80% by 2040.

Actionable Metric Outcome:

- 50 percentage point increase in the proportion of recycled inputs across product lines.
- Strengthens supply chain circularity by increasing demand for post-consumer recycled (PCR) plastics.

Plastic Leakage Outcome:

- Reduces dependence on virgin plastic, mitigating upstream extraction impacts.
- Contributes to reduction in plastic mismanagement risk due to enhanced recyclability.

Case Study: Implementing Take Back Programs

Company : Large Sports Equipment Producer

Project: Establishing an industry-wide take-back program that accepts multiple brands' end-of-life products, improving overall waste recovery infrastructure.

Actionable Metric Outcome:

- Increased collection rate of used products, ensuring more effective recovery
- Stronger partnerships with recyclers to guarantee closed-loop processing

Plastic Leakage Outcome:

- Leakage is reduced thanks to the reduction of product mismanagement risk by ensuring a controlled end-of-life pathway.

Source: Inspired by *Evaluating Progress on Plastic Pollution Mitigation: Circularity & Plastic Footprint – A Case Study. Earth Action, 2024.*
For more details and to see an example with explicit numbers, read the report here.

Pillar A
Reduce Leakage

Pillar B
Avoid Leakage

Pillar C
Recover Leaked Plastic

Action code	B3
Action name	Develop System-wide Waste Prevention Technologies
Description	Creating or advancing new technologies that prevent plastic leakage at a system-wide level, benefiting the entire waste management ecosystem.
Why it matters	Even if a company manages its own plastic well, leakage happens at a system level due to outdated waste handling or missing technologies. Developing new solutions helps the entire industry reduce plastic loss.
Examples	AI-powered waste sorting innovations. Open-source microplastic filtration systems. Advanced plastic tracking & leakage detection tools.
Eligibility criteria	Must not be limited to the company's own operations–the technology must be usable by external stakeholders. Must include quantifiable data on how the technology reduces leakage and supports plastic waste reduction.
Evidence required	Documentation of technology development & intended application. Adoption or partnerships with external waste actors.
Accounting link	No direct footprint reduction, but enables system-wide mitigation. Indirect impact on plastic leakage rates in regions where adopted. Impacts must be measured, monitored, and verified following best practices from Verra's methodologies on waste prevention.
Connection to PFN footprint methodology	Not accounted as direct mitigation, but could improve waste mismanagement factors over time.
Common pitfalls	Claiming improvements without proper measurement or verification–actions should be aligned with existing frameworks like Verra's Waste Collection and Recycling Methodologies.

Case Study: AI-Powered Waste Sorting for System-Wide Plastic Leakage Prevention

Company : Waste Management Company & Recycling Facilities

Project: Implementing AI-powered waste sorting technology to improve plastic recovery and prevent mismanagement.

Actionable Metric Outcome:

- Increased accuracy of plastic waste sorting by +30%, improving recyclability and reducing plastic loss.
- Enabled the diversion of plastic from landfills into effective recycling streams.

Plastic Leakage Outcome:

- By diverting plastic from conventional disposal pathways into effective recycling streams, this intervention helps prevent mismanagement and supports a more circular waste system. The exact impact depends on regional waste management efficiency and disposal infrastructure.

Source: *Adapted from Greyparrot AI case study, a real-world AI-driven waste tracking and sorting solution - for demonstration purposes only.*

B3 vs. A3 – Key Difference

A3 – Improve Waste & Wastewater Systems in Own Operations

- Upgrading infrastructure in your own value chain to prevent plastic loss.
- Example: Installing wastewater microplastic filters in company-owned factories.

B3 – Develop System-wide Waste Prevention Technologies

- Creating new technologies that prevent leakage at an industry-wide level.
- Example: Developing wastewater microplastic filters for widespread adoption across industries.

Quick Check:

- If it improves your own operations → A3
- If it's a scalable technology for the whole system → B3

Pillar A
Reduce Leakage

Pillar B
Avoid Leakage

Pillar C
Recover Leaked Plastic

Action code	B4
Action name	Fund Infrastructure for System-wide Plastic Reduction.
Description	Investing in reuse, refill, or other plastic-free systems that reduce plastic demand across entire markets, enabling a long-term shift away from plastic use.
Why it matters	Even if a company reduces its own plastic use, system-wide plastic dependency remains high. Funding solutions that replace single-use plastic at scale helps avoid plastic generation in the first place.
Examples	Fund community reuse hubs to reduce single-use plastics. Invest in alternative packaging distribution models, such as refill or returnable systems. Support the development of standardized reusable packaging for industry-wide adoption. Finance pilots for material systems that reduce dependence on disposable plastics.
Eligibility criteria	Must demonstrate additionality–the intervention should enable new plastic reduction outcomes that would not have occurred otherwise.
Evidence required	Documentation of investment in systemic plastic reduction initiatives. Evidence of scalability & long-term reduction potential.
Accounting link	Funding should support quantifiable system-wide plastic reduction. Tracking methodologies should align with Verra's waste reduction MRV principles.
Connection to PFN footprint methodology	No direct impact on footprint calculations, but complements upstream material footprint modelling.
Common pitfalls	Funding waste systems without tracking how much plastic is prevented from leakage.

Aligning Financial Incentives with Plastic Avoidance

Scaling reuse, refill, and alternative distribution models requires sustainable financing models that reward tangible reductions in plastic use. Outcomes-Based Waste Prevention (OBWP) ensures investments support real reductions in single-use plastic dependency, driving systemic change.

Example:

A company funds a network of reuse hubs, with financial returns tied to measurable decreases in plastic packaging use within a region.

B4 vs. A4 – Key Difference

A4 – Improve Value Chain Waste Systems

- Fixing waste infrastructure to properly handle plastic waste (e.g., expanding sorting, collection, or wastewater treatment capacity).

B4 – Fund Systemic Plastic Reduction

- Shifting away from plastic dependency by investing in reuse, refill, or alternative distribution models (e.g., community reuse hubs, returnable packaging systems).

Quick Check:

- If it improves waste collection/treatment → A4
- If it replaces plastic use entirely → B4

Mapping Actions to the Pillars

Pillar C - Recover Plastic Already Leaked (Plastic Recovery)

Action Box	What it means	Example
C1 – Direct Cleanup of Facility-Origin Plastic Leakage	Recovery of leaked plastic from company operations	Cleanups near company sites or facilities
C3 – Fund Plastic Waste Recovery	Financially supporting plastic waste recovery through direct investment in cleanup projects or by purchasing verified recovery credits.	Funding community-led cleanup programs or purchasing third-party certified plastic recovery outcomes-based waste prevention
C4 – Fund recovery innovation	Fund Innovation in Recovery Technologies	Fund new plastic capture tech (e.g., floating barriers)

Outcomes-based waste prevention as a flexible financing mechanism

Action C3 - Plastic Recovery Activities

Credits, as financing mechanisms, can support a range of interventions across the plastic mitigation landscape, including upstream solutions (e.g., reuse systems), downstream waste management infrastructure, and innovation pilots. However, in the current version of the framework, credits are classified specifically under Action C3 (Plastic Recovery Credits) based on their functional use in compensating for residual plastic leakage, not on the diversity of interventions they may finance.

This classification follows a key distinction: credits are financial mechanisms, not action types.

Plastic credits (like carbon credits) are transactional instruments that commodify verified outcomes, typically measured in tons of plastic recovered or leakage avoided, which are then purchased by an entity to compensate for its own residual footprint.
While the projects behind credits may involve upstream, downstream, or system-level interventions, the credit itself does not change the nature of the action, it changes who claims the impact and how.

How can credits be generated?

Credits can be generated from a wide variety of mitigation projects.

- The PFN classification reflects the use and ownership of claims rather than the underlying activity type.
- Projects generating credits may be eligible under Pillar A or B if conducted directly, without the third-party transfer of claims.
- This approach ensures that the framework more accurately reflects how these mechanisms operate in practice, while preserving its core accounting logic.

Action code	C1
Action name	Direct Cleanup of Facility-Origin Plastic Leakage
Description	Recovering plastic waste from areas directly surrounding company facilities, including production sites, warehouses, logistics hubs, and supplier locations. This ensures that plastic generated within a company's value chain does not contribute to environmental pollution.
Why it matters	Plastic waste can accumulate near operations due to production losses, handling inefficiencies, or inadequate waste management. Conducting direct cleanups mitigates immediate pollution risks and ensures corporate responsibility for plastic leakage within controlled zones.
Examples	Removing plastic waste from factory perimeters and industrial zones. Conducting cleanups near logistics hubs and supplier sites. Engaging employees in local collection activities.
Eligibility criteria	Cleanups must be conducted near company-owned or controlled sites. Collected plastic must be properly measured, documented, and disposed of responsibly.
Evidence required	Reports on collected plastic volume, type, and fate. Geotagged and timestamped cleanup records.
Accounting link	Directly reduces plastic leakage near company sites but does not prevent new leakage.
Connection to PFN footprint methodology	Mitigate past plastic losses within a company's operations, ensuring direct responsibility for its leaked plastic. These actions can align with plastic recovery credits and corporate accountability efforts.
Common pitfalls	Lack of tracking–cleaned plastic must be properly recorded and disposed of. Not addressing root causes–cleanup alone does not eliminate leakage risk.

Case Study: Verified Cleanup of Pellet Losses at Industrial Facilities

Company : Global Petrochemical and Plastics Manufacturer

Project: Implementation of a verified pellet recovery initiative at production plants, transport hubs. The project ensures that leaked plastic resin pellets are systematically traced, collected, and responsibly disposed of before they can contribute to microplastic pollution.

Actionable Metric Outcome:

- Recovered 5 tonnes of plastic pellets in the first year across production and logistics sites.
- Geotagged and timestamped cleanup records ensured transparency and compliance.
- Partnered with third-party waste handlers for responsible disposal, preventing re-release.

Plastic Leakage Outcome:

- Removed leaked plastic pellets from factory perimeters before they could reach waterways and oceans.

Verification:

- Cleanups conducted under independent third-party monitoring, ensuring traceability and impact reporting.

Source: *fictive. Shown for demonstration purposes only, and all figures are illustrative.*

Action code	C3
Action name	Fund Plastic Waste Recovery
Description	Providing financial support for plastic waste recovery efforts that remove leaked plastic from the environment through verified cleanup projects or plastic recovery credits.
Why it matters	Even with strong prevention measures, plastic leakage occurs. Funding certified recovery efforts ensures proper collection, tracing, and responsible disposal of leaked plastic, preventing long-term environmental harm.
Examples	Extracting plastic waste from unregulated or open dump sites and divert to formal waste management systems. Partnering with certified organizations to scale plastic waste recovery programs. Purchasing plastic recovery credits from verified third-party standards (e.g., Verra).
Eligibility criteria	Recovery projects must be certified under an independent, auditable impact accounting methodology. Must ensure that plastic is diverted from unregulated disposal sites and integrated into formal waste management systems.
Evidence required	Third-party verification of responsible waste handling.
Accounting link	Must follow standardized collection and disposal methodologies.
Connection to PFN footprint methodology	Provides a compensatory mechanism for addressing historical plastic leakage. Impact accounting methodologies such as the Verra one ensure traceability and credibility, aligning with the World Bank's recommended frameworks for plastic recovery.
Common pitfalls	Lack of verification - cleanups must be documented, reported, and properly managed to be credible. Double counting risk – companies cannot claim cleanup impacts already reported under other programs.

Case Study: Deekali Plastic Recycling Project in Senegal

Company : Deekali Project, in collaboration with local partners like Proplast

Project: Engaging plastic pickers to remove waste from communities and repurpose it into valuable goods and commodities

Actionable Metric Outcome:

- From 2016 to 2022, the project collected 3,171 tonnes of plastic waste and recycled 4,296 tonnes.
- Local recyclers processed the collected plastic into recycled materials for manufacturing products like chairs, buckets, and bins.

Plastic Leakage Outcome:

- Significantly reduced environmental plastic pollution by diversion of plastic waste from landfills and natural habitats.

Source: *Verra, www.verra.org*

Case Study: Purchasing verified plastic recovery credits

Company : Earth Animal, a premium pet food and wellness company, in collaboration with rePurpose Global.

Project: Fund plastic recovery efforts in Colombia.

Actionable Metric Outcome:

- Funded the recovery of plastic equivalent to its annual plastic consumption, by directly financing waste recovery projects in high-leakage regions.
- Supported infrastructure and waste worker communities to enhance collection and processing capacity.

Plastic Leakage Outcome:

- Prevented 7.6 metric tons of plastic waste from entering the Pacific Ocean through a cleanup initiative in Buenaventura, Colombia.

Source: *rePurpose Global www.repurpose.global, Earth Animal, www.earthanimal.com*

Action code	C4
Action name	Fund Innovation in Recovery Technologies
Description	Investing in new technologies that improve the efficiency, scalability, and traceability of plastic waste recovery efforts.
Why it matters	Many cleanup efforts are limited by inefficient collection methods, high costs, and a lack of traceability. Funding recovery technology can enhance the effectiveness of plastic removal and ensure collected materials are properly processed.
Examples	Develop of fund technologies for microplastic removal from water bodies (post-leakage), plastic capture systems for surface waters, bioremediation for plastic waste removal, sand and soil plastic cleanup technologies.
Eligibility criteria	Investments must target innovative recovery methods with scalable impact. Technologies must contribute to measurable improvements in plastic removal efficiency.
Evidence required	Documentation of technology development and implementation. Measured impact on plastic recovery efficiency (e.g., % increase in capture rates).
Accounting link	Facilitates more effective plastic removal but does not directly quantify leakage reduction.
Connection to PFN footprint methodology	No direct link–focuses on recovery technology, not footprint-driven flows.
Common pitfalls	Lack of proven impact–technologies must demonstrate effectiveness. No immediate reduction–investments may take time to translate into measurable results.

Case Study: Textile Industry's Investment in Microplastic Removal from Water Bodies

Company : Leading Global Textile Manufacturer

Project: Funding and deploying microplastic filtration technology in a pilot lake to mitigate long-term pollution from textile production.

Actionable Metric Outcome:

- Invest €2 million into a pilot and its testing to allow proof of concept.
- Establish a research collaboration with environmental scientists to assess effectiveness.

Plastic Leakage Outcome:

- If successful, the technology would allow 5 tons of capture microplastic per system annually.
- Estimated cost of €10'000-20'000 per ton of microplastic removed, helping define scalability potential.
- Potential to scale up deployment across other polluted water bodies linked to textile production.

Source: *fictive (shown for demonstration purposes only, and all figures are illustrative.)*

C4 – Fund Innovation in Recovery Technologies

Tying Innovation Investments to Measurable Impact

New plastic recovery technologies must demonstrate real improvements in plastic capture rates. Outcomes-Based Waste Prevention (OBWP) ensures that funding for innovative recovery solutions is linked to verified increases in plastic retrieval and processing efficiency.

Example:

A company funds the deployment of sand filtration technology to remove microplastics from beaches, with payments tied to measured volumes of microplastics collected per site.

Part. 4

Application boundaries

What are the eligibility criteria for mitigation actions?
What are the data needs?
What are the accounting boundaries?

What differences between Pillar A and B?

Pillar A (Reduce Leakage in My Scopes 1, 2, 3) → "Attributional" Actions

- ✓ Directly reducing the plastic leakage risk of the company's own products, operations, or supply chain.
- ✓ These actions change the footprint of the company itself–i.e., they show up in the company's plastic footprint.

Pillar B (Avoid Leakage by Influencing Other Systems) → "Consequential" Actions

- ✓ These actions don't reduce the company's direct footprint but instead shift the overall system.
- ✓ The company's product may stay the same, but it influences other players, consumers, or infrastructure in a way that reduces plastic leakage overall.

Key Distinction:

- If it improves systems that handle your plastic → it's Pillar A.
- If it improves systems that reduce plastic leakage overall, even for other products → it's Pillar B.
- If an action has both direct & system-wide effects (e.g., a brand offering reuse/refill for its own products vs. investing in a city-wide refill infrastructure) → it may be split between Pillar A (own footprint) and Pillar B (broader system impact).

What differences between Pillar A and B?

Example: Reuse/Refill System

Pillar A (Direct Reduction):

- By introducing refill stations in its stores, the company cuts its packaging footprint, with plastic savings in company-controlled settings counted under Pillar A
- Note on A4: Attributional actions can take place outside direct operations if the intervention directly manages the company's own waste flows (e.g., post-consumer packaging). This makes them part of the company's attributable Scope 3 footprint, consistent with the GHG Protocol.

Pillar B (System Impact):

- By partnering with cities and retailers, the company scales refill solutions beyond its stores, with system-wide impacts counted under Pillar B.

Since some actions have overlapping impacts, companies can apply a ratio or weighting method to determine how much of the plastic leakage reduction belongs to each pillar. The most precise approach is volume-based attribution:

Approach	How It Works	Example
Volume-Based Attribution	Measure how much of the reduction happens **within** the company's system vs. the broader market.	If your company operates a refill model that services both your products and others, and your brand's products represent 60% of the total plastic packaging weight handled in the system, then 60% of the leakage reduction benefit from this system can be attributed to your company.

Clarifying A4 vs B4

When is external infrastructure Attributional (A4) vs Consequential (B4)?

A4 – Attributional Investment:

- Supports external infrastructure (e.g., waste management) that directly handles the company's post-consumer products.
- Example: A company funds a collection system in a country where its packaging is sold and creates leakage risk.

→ Result: Counts under Pillar A.

B4 – Consequential Investment:

- Supports broader systems not tied to the company's footprint.
- Example: Funding systems in regions where the company does not operate, or investing in unrelated plastic reduction programs.

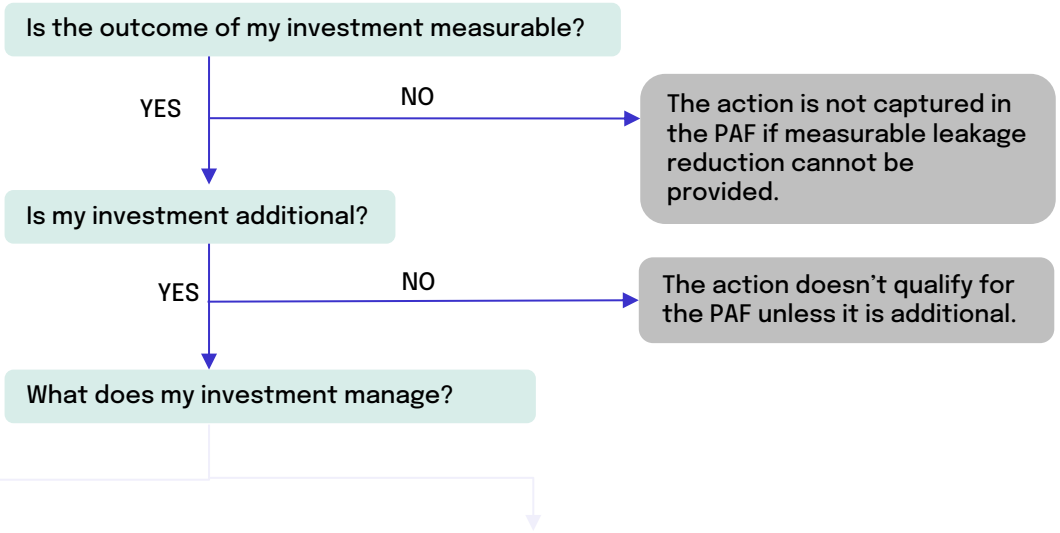
→ Result: Counts under Pillar B, enabling system change but not reducing the company's own footprint.

	Manages company's waste	Manages other waste
Inside VC	A1-A3	Not applicable
Outside VC	A4*	B4

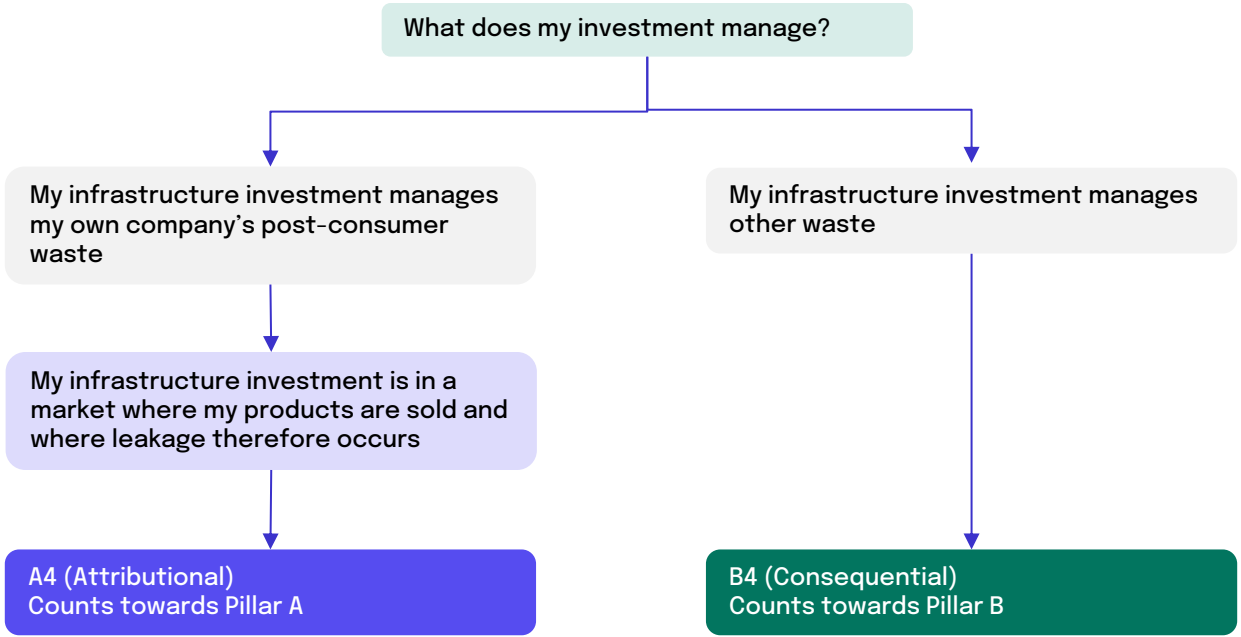
** This is consistent with GHG Protocol Scope 3 Category 12 ("end-of-life treatment of sold products"), which assigns responsibility for post-consumer material flows to the producer.*

A4 vs B4 | External Infrastructure Investments Decision matrix

Preliminary questions



A4 vs B4 | External Infrastructure Investments Decision matrix



Shared or co-funded interventions (A4 vs. B4 allocation)

When multiple organizations contribute to a shared system (e.g. community refill hubs, jointly funded sorting centers):

- Attribute impact proportionally to each actor's contribution – using volume, financial input, or control over material flows.
- Leakage prevention within own product system → A4.
- Broader system benefits for other products/actors → B4.
- To avoid double counting, only one actor can claim the *same* unit of leakage reduction – others must allocate their share accordingly.

Baseline and attribution test

Baseline (would it happen anyway?)

- Already financed or legally required → baseline (not additional).
- Covered by public/EPR budget or compliance plan → baseline.

Additional (creates new impact)

- Adds new capacity, coverage, performance, or speed → additional.
- Can demonstrate incremental tonnage or improved capture rate.

Attribution (whose impact?)

- Impact within own value chain → A4.
- Systemic benefits for others → B4.
- Allocate by volume, investment, or control share.
- The same leakage reduction can only be claimed once; split between funders.

Understanding Pillar B – within vs outside value chain

Category	Key characteristic	Description	Examples
B1–B3 ("Within value chain")	Direct influence or operational integration	Actions that shape systems the company is directly engaged with – e.g. via procurement choices, product innovation, R&D, or partnerships with existing suppliers/customers.	Launching a reuse/refill model- Designing with recyclability in mind- Building a business case for new recycling tech
B4 ("Outside value chain")	Financing external system change	Provision of funds to actors/contexts beyond the company's footprint or commercial ties. No direct influence or ownership[1] – impact is achieved through enabling systemic capacity.	Funding an NGO-led recycling program in a region where the company doesn't operate- Contributing to a municipal waste system without a supplier link

Note: Some companies may engage in both B3 and B4 for the same solution (e.g. co-developing a technology and also financing its wider deployment). In such cases, split accounting is encouraged.

Note[1]: Refers to the ability of an organization to directly manage or govern the emissions sources within its own operational boundaries or activities. This means that the organization has immediate authority over these emissions sources and can implement measures and decisions to reduce or mitigate them (more information: PFN module on scope and boundaries).

Understanding when circularity actions (e.g., B2) count toward leakage mitigation

Some circularity strategies, like increasing recycled content or designing for recyclability, only count as leakage mitigation if they lead to measurable reductions in plastic entering the environment.

Misconception	Correction
"All circularity = leakage mitigation"	Not always. Circularity contributes only when it alters the fate of plastic in high-leakage contexts.
"Recycled content = lower leakage"	Not necessarily. Recycled content sourced from low-leakage geographies (e.g. Germany) does not reduce leakage risk in high-leakage markets (e.g. Indonesia).
"Designing for recyclability reduces leakage"	Only if the improvement occurs in a geography where better design actually leads to higher collection or sorting.

What determines if B2 counts as leakage mitigation

Condition	Required for B2 to count under PAF?
Recycled content directly displaces virgin plastic	Yes, but only if the shift supports a higher rate of collection or reduces leakage somewhere in the system.
Sourcing recycled content from a low-leakage country, but using it in a high-leakage market	No impact unless the sourcing incentivizes local collection in high-leakage geographies.
Recyclability improvements that lead to actual increases in collection, sorting, or reprocessing in high-risk geographies	Yes, if the company can reasonably demonstrate the linkage.
Recyclability improvements in a region where collection systems are already strong (e.g. Europe)	Not counted toward leakage reduction; contributes only to circularity, not mitigation.

- B2 actions are categorized under Pillar B because their impact is consequential, not directly measurable on a specific footprint unless strong causality can be established.
- These actions still play a valuable role, e.g. signalling demand for recycled plastic or improving packaging design, but they must be interpreted carefully.

Standard baseline for additionality checks

Action type	Typical baseline	What counts as additional	Evidence required
A4 – Fund value-chain waste systems	Supplier/retailer compliance investments; mandated EPR spend; existing contracts that already secure the treatment of your products	Co-financing new or accelerated capacity that specifically increases safe collection/sorting/treatment for your products/markets (beyond compliance or original schedule)	CapEx plan & commissioning docs; contract addenda showing incremental tonnage/capacity; before/after service levels; attribution calc tying capacity to your flows
B4 – Fund infrastructure for system-wide plastic reduction	Public budgets/EPR-funded municipal upgrades already planned/financed; philanthropic grants already committed	Private funds that expand coverage, frequency, or performance (e.g., extra routes, new MRF line, leakage-hotspot capture) beyond the approved plan, or that pull forward delivery	MOU with public operator; baseline plan & budget; incremental scope (Δ routes/throughput/contamination rate); commissioning KPIs & third-party verification; time-acceleration proof
C3 – Fund plastic recovery activities	Ongoing cleanup programs and volumes already financed; compliance cleanups	New verified recovery volumes or material classes not otherwise funded; measurable scale-up of recovery beyond baseline	Independent verification/registry statements; geo-tagged logs; material audits; permanence/handling chain; double-counting controls

Baseline = what would happen without the intervention.
Additional = what changes because of it.

The leakage accounting baseline should incorporate expected impacts from existing (not planned) policies, such as EPR (when enforced).

Why granular and high-quality data are key

Accurate data is the foundation of credible mitigation accounting.

Plastic mitigation results are only as reliable as the data behind them.

Granular and high-quality data allow companies to:

- Identify true leakage hotspots across polymers, applications, and geographies.
- Quantify the impact of actions using *country-specific mismanagement and release rates*.
- Ensure that reported leakage reductions are verifiable, comparable, and science-based.

Data quality principles
(from the PFN Data Governance Module)

Use the pedigree matrix to assess:

- Reliability of source data
- Temporal correlation (data age and representativeness)
- Geographical correlation (local relevance)
- Completeness (coverage and transparency)

Recommended data references:

- PFN Data Governance Module (v1, 2023): data quality and transparency standards. Link
- Plasteax: polymer- and country-level leakage and mismanaged waste data. www.plasteax.earth
- Packaging Data Hub (in development): enhanced packaging waste data. www.packagingdata.earth
- CDP Plastics Module (2025): structured disclosure aligned with PFN methodologies. Link

Avoiding cross-impact trade-offs

The PAF focuses on quantifying *plastic leakage mitigation*.

When evaluating mitigation options (e.g., material substitution or system redesign), users are encouraged to apply a basic LCA or environmental-screening check to ensure the action does not shift impacts to other dimensions such as climate, land use, or toxicity.

Acknowledgment

The Path Forward – Towards Target Setting

- The PAF framework categorizes mitigation actions but does not yet define how much plastic must be reduced per pillar.
- Setting reduction targets per intervention type (similar to NZI's sectoral pathways for climate) is the logical next step.
- The Plastic Footprint Network will continue evolving this methodology, ensuring that companies:
    - Have clear reduction roadmaps aligned with science.
    - Can compare performance transparently.
    - Align their actions with global plastic reduction goals (e.g., UN Treaty on Plastic Pollution).

Final Thought:

A mitigation framework is only useful if it helps drive meaningful action. The next challenge is defining clear targets for how much plastic must be reduced, where, and by when. Target-setting will be key to scaling corporate action.

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Our commitment to continuous improvement

The Plastic Footprint Network's successful collaboration is built on pillars of:

- Open
- Non-competitive and productive dialog
- Leveraging science and supporting ongoing research
- Broadly empowering global stakeholders (product manufactuers, brand owners, treaty negotiators, regulators, consultants, NGOs, etc) to effectively do their part to address the plastic pollution crisis.

Given corresponding commitments to transparency and continuous improvement, we welcome and encourage your feedback and input on this document so that the methodology can continue to be enhanced and refined.

Thank you for supporting the work of the Plastic Footprint Network.

Contact us at: contact@plasticfootprint.earth

Our mission is to continuously advance the Plastic Footprint Methodology, ensuring it remains at the forefront of sustainable practices and promoting its widespread adoption. By empowering companies to rigorously assess, enhance, and transparently report their plastic footprints, we aim to make significant strides in mitigating the plastic pollution crisis.

Development Process

PAF v2 was developed through a multi-stage consultation process.

1

Stage 1
Initial framework development

Earth Action (PFN Secretariat) developed PAF v1, released in March 2025.

2

Stage 2
Public consultation

PAF v1 was opened for public consultation. Feedback from practitioners, companies, NGOs and researchers informed revisions.

3

Stage 3
Working group consultation

Technical feedback was provided by members of the PFN Beyond Value Chain Working Group.

4

Stage 4
Strategic Committee consultation

Members of the PFN Strategic Committee provided review comments and strategic input.

5

Stage 5
Integration of feedback

All feedback was reviewed and integrated by the PFN Secretariat in the development of PAF v2.

PFN methodologies follow an iterative development process and will continue to evolve as new evidence and feedback emerge.

Plastic Footprint Network

The Plastic Footprint Network is convened by EA – Earth Action

This working group was established to develop a scientifically robust and practical methodology for accounting and categorizing mitigation actions. It follows PFN's structured process for scientific integrity and alignment with global standards.

Lead authors

(Responsible for developing the methodology, ensuring scientific rigor, and managing the working group)

earth action

PFN secretariat lead

(Management of stakeholder engagement, working group coordination, and ensures transparency in PFN's collaborative process)

earth action

PFN Strategic Committee

(Consultative role for strategic review)

Anthesis
earth action
Quantis
SYSTEMIQ
WWF

Contributing working group members

(Technical experts and practitioners who provided insights and feedback to inform the methodology)

VERRA
Seven Clean Seas
Plastic Collective
rePurpose
ogyre
CONTROLUNION
south pole

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Transparency note

Participation in consultations or working groups does not constitute endorsement of the methodology or its conclusions. Final methodological decisions remain the responsibility of the PFN Secretariat.



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Plastic Footprint Network

www.plasticfootprint.earth

contact@plasticfootprint.earth

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