

Tackling plastic pollution:

A pioneering methodology to measure plastic leakage and identify its pathways into the environment

Quantis + ea



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Together, let's lay the foundation for a plastic leakage-free future

The Plastic Leak Project (PLP) delivers the **first science-based methodology, industry-specific guidance and metrics** that sustainability managers and corporate decision-makers can use to **identify and inventory plastic leakage** along the value chain. Developed by 30-plus stakeholder organizations in a pre-competitive initiative co-founded by Quantis and EA, the PLP guidelines provide businesses with a **strong foundation to define meaningful and effective strategies and actions** for addressing plastic pollution.

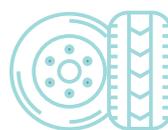
Robust insights to drive meaningful action

Designed specifically for business, the PLP guidelines provide companies at all stages of the value chain with a robust, standardized method for calculating and reporting estimates of plastic and micro-plastic leakage at both corporate and product level. With a plastic leakage assessment, companies can **locate hotspots**, understand **how much leakage is occurring** and identify the **main factors contributing to plastic pollution** in their value chain. The results can be used by corporate decision-makers, sustainability managers, designers, R&D and marketing teams to **define priorities, guide eco-design efforts, track progress** and **communicate credibly** about the environmental performance of products and the business as whole.

The PLP methodology is to be used by:

- Sustainability managers
- Corporate decision-makers
- R&D teams
- Product & packaging designers
- Marketing teams
- Supply chain managers

... to assess plastic leakage linked to:



Transport



Textiles



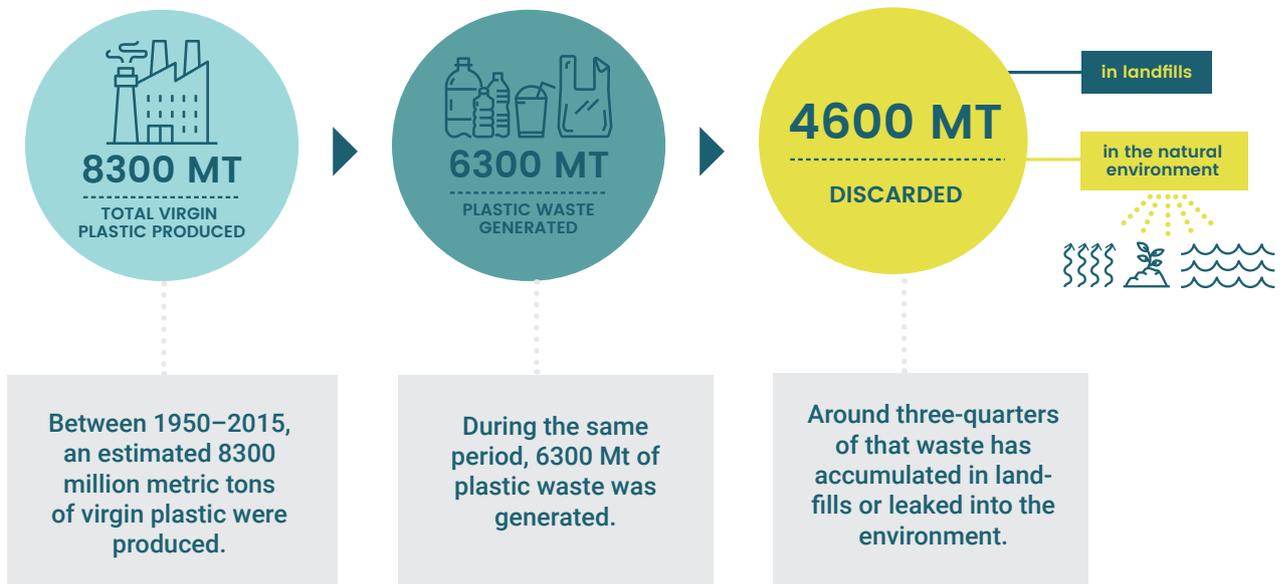
Plastic products and packaging



Plastic pellets

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Move from commitments to metrics-based problem solving



Source: Geyer, R., Jambeck, J. R., & Law, K. L. (2017). Production, use, and fate of all plastics ever made. *Science advances*, 3(7), e1700782.

Growing awareness around the environmental impact and scale of plastic pollution has made the issue a hot-button topic and major risk for businesses in sectors ranging from agri-food and apparel to cosmetics, shipping and beyond.

Consumers and investors expect businesses to take action and are willing to drop brands that fail to do so. In response, companies are making bold commitments to reduce plastic leakage. Yet **they lack the tools and information they need to translate these commitments into actions** with meaningful impact. Current life cycle assessment, a key tool companies use to assess the environmental impacts of their products and business, doesn't account for plastic as a pollutant, meaning **businesses can't identify when or where plastic leakage is occurring**. As a result,

many of the policies and efforts made to-date have been based on emotions and pressure rather than science. While critical for reducing plastic waste, these measures don't get to the root causes of the problem.

Every business must first detect plastic leakage in their own value chains to effectively tackle plastic pollution on a global scale.

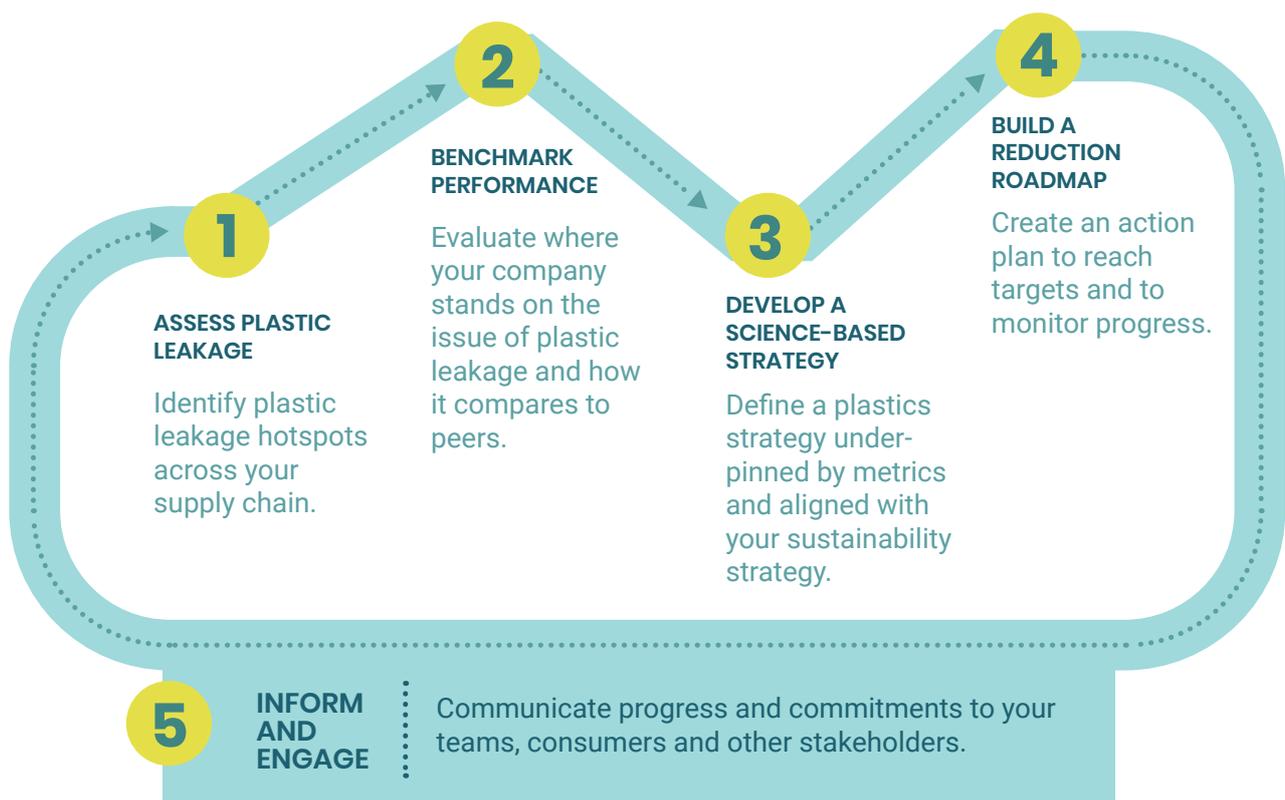
By integrating plastic leakage into life cycle assessment, the Plastic Leak Project guidelines enable companies to detect leakage hotspots, obtain a global view of issues related to plastics, avoid trade-off of impact and define effective strategies to tackle plastic pollution.

Bolstering **business value** with plastic leakage assessment

The plastic leakage methodology empowers companies to:

- + **Minimize risks and build business resilience** across your value chain by making targeted and impactful decisions founded on science.
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- + **Strengthen your brand reputation** by demonstrating leadership in tackling plastic pollution.
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- + **Uncover opportunities for product and supply chain management innovation** that bring companies closer to their sustainability goals and strengthen competitive advantage.
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- + **Foster trust and generate buy-in with stakeholders** with credible communications about your efforts, backed up by robust metrics.
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The Plastics Strategy Journey: A plastic leakage assessment is the first step in building a science-based plastics strategy



+ Arla Foods

Assessing corporate plastic leakage to inform Arla's sustainability strategy

THE CHALLENGE:

Arla Foods, a multinational dairy co-operative, has committed to reducing plastic leakage along its global value chain as part of its wider sustainability strategy. As a first step in defining an effective action plan to achieve this goal, Arla performed a corporate plastic leakage assessment to understand **how much** leakage is occurring, **where** it is occurring, and during which stages of the value chain.

NEXT STEPS:

Arla will work closely with stakeholders in its core markets to increase recycling rates. In Nigeria and Bangladesh, the company will focus efforts on addressing littering.

RESULTS:



4% of the 100,000 tons of plastic used annually in Arla's value chain leaks into the environment



23% of the leaked plastic ends up in oceans and 77% in other natural systems



The end-of-life stage accounts for 96% of Arla's plastic leakage



Nigeria and Bangladesh are among the countries with the highest rates of plastic leakage as a result of mismanaged waste.

+ Sympatex Technologies

Quantifying the plastic leakage along the product life cycle of a high performance jacket

THE CHALLENGE:

Sympatex is one of the leading global suppliers of high tech functional textiles. As part of its commitment of achieving 100% circularity with no traces of microplastic pollution throughout the life cycle of its products, the company needed to **assess the plastic leakage associated with its new outdoor jacket.**

RESULTS:



Of the 400 g of plastic used along the life cycle of Sympatex's jacket, 122 g leak into the environment.



5% of the leaked plastic ends up in the ocean and **95%** in other terrestrial environments.



The end-of-life stage accounts for over 99% of leakage following the product disposal.

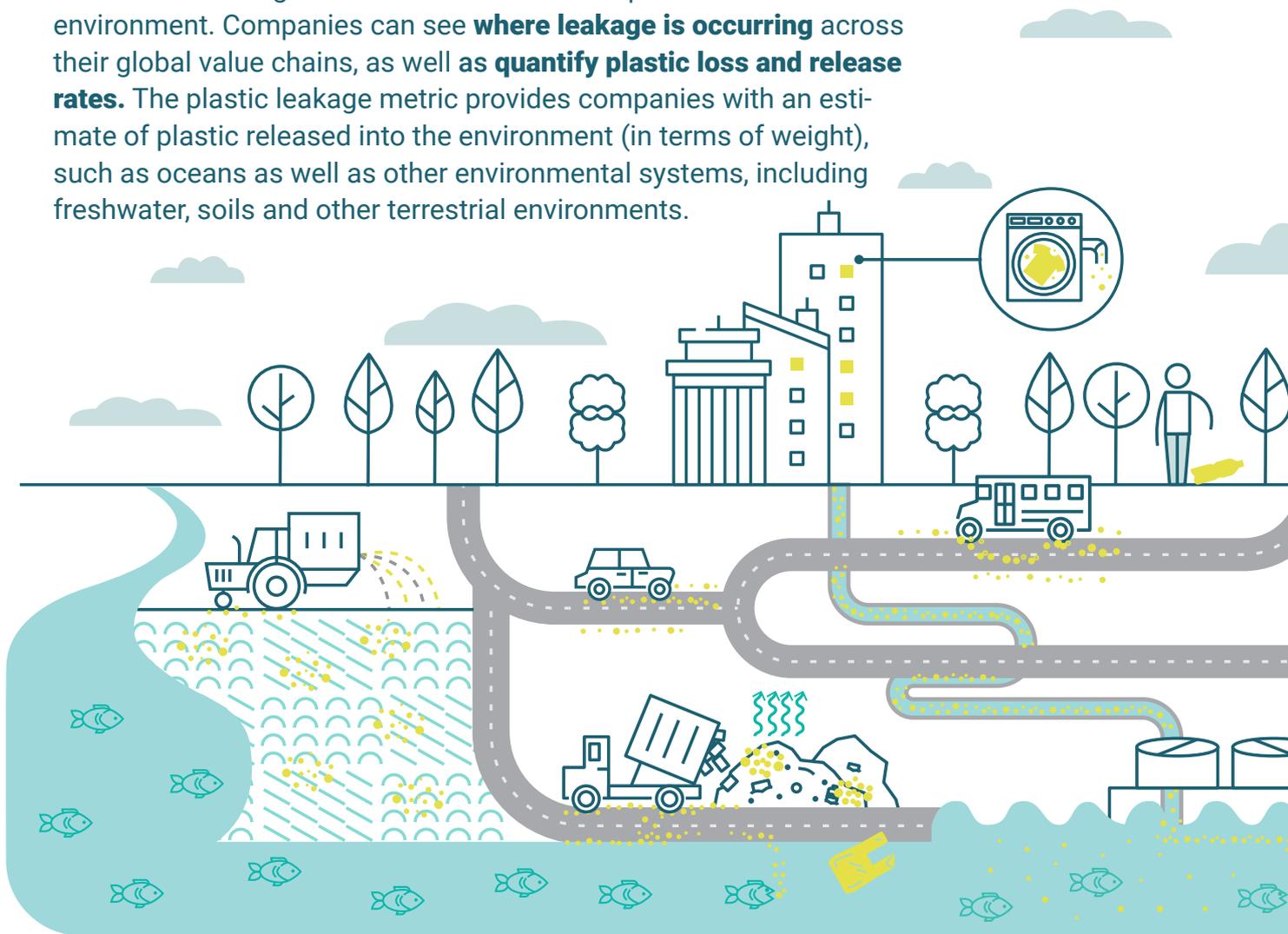
KEY TAKEAWAYS:

"The results of the assessment really surprised us and broke down some misconceptions about where in our value chain plastic leakage is occurring. We now know where we need to be focusing our efforts in order to have a real impact in eliminating plastic pollution from the life cycle of our product. At the same time, it confirms us in our ambitious goal, which we have set for ourselves, of closing the textile loop as quickly as possible."

Dr Rüdiger Fox, CEO, Sympatex

Harnessing science to stop leakage at its source

Tackling plastic leakage requires businesses to go straight to the source. The PLP guidelines make this possible by providing a framework for assessing the release and transfer of plastic into the natural environment. Companies can see **where leakage is occurring** across their global value chains, as well as **quantify plastic loss and release rates**. The plastic leakage metric provides companies with an estimate of plastic released into the environment (in terms of weight), such as oceans as well as other environmental systems, including freshwater, soils and other terrestrial environments.



Loss

Micro and macroplastic loss occurring as a result of abrasion during transport (tires), washing (synthetic textiles), weathering, unintentional spills during production, and waste mismanagement.

Transfer

The main pathways through which plastics are released into the environment:

- Wastewater
- Road runoff
- Air
- Uncollected waste (e.g. litter or illegally dumped waste)
- Poorly managed waste (non-sanitary landfills)

Initial Release

The natural systems into which the plastic is initially released:

- Ocean
- Freshwater
- Soils
- Terrestrial environment (other than soils)
- Air



PLP Insights

The questions you will get answered by doing a PLP assessment

Key results

What is the total amount of leakage (in tons) across the value chain?

Value chain

Where is leakage occurring along the value chain?

Country

In which countries is leakage taking place?

Markets, Product, Polymer

Which markets, products and polymers are contributing to leakage?

Fate

What happens to the leaked plastic after one year?

Re-distribution → Final Release

The mechanisms of plastic transfer within the natural environment, from initial to final release:

- Transport by river
- Redistribution by air to freshwater or soil
- Leaching from soil to freshwater and oceans

The natural systems in which leaked plastic ends up:

- Ocean
- Freshwater
- Soils
- Terrestrial environment (other than soils)

 **Optional**

PLP co-founders include leading environmental sustainability consulting group **Quantis** (quantis-intl.com) and eco-design center **EA** (shaping-ea.com).

Project stakeholders represent a diversity of expertise and industries across the plastic value chain, as well as experts in micro-plastics, wastes, LCA and circularity, well-recognized academics exploring macro- and micro-plastics issues, renown international organizations for nature conversation, and the European Commission, linking this project with the on-going explorations on impacts of plastics.

Strategic Committee



Member Organizations



Advisory Committee



Discover the Plastic Leak Project
quantis-intl.com/plastic-leak-project
Download the PLP Guidelines at
quantis-intl.com/plastic-leak-project-guidelines
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