PLASTIC LEAK PROJECT
INTRODUCTION
The world is watching.

Plastic is making headlines and brands are under pressure by consumers and other stakeholders to take action.
HERE’S WHAT WE DO KNOW...
How much plastic is produced

335 Mt/y
Plastic production in the world

= 3.3 Mt/y

33'000
Eiffel towers

How much plastic is produced

Plastic production in Europe

- Packaging: 40%
- Building & construction: 20%
- Others (include appliances, mechanical engineering, furniture, medical etc.): 17%
- Automotive: 10%
- Electrical & electronic: 6.2%
- Household leisure & sport: 4.2%
- Agriculture: 3.3%

Plastic production in the world:

335 Mt/y

Europe: 60 Mt/y
Since the beginning of plastic production era (~1950), we have produced 8300 Mt of plastic...
... and only 7% of the world’s plastic has been recycled (1950-2015).

- Still in use: 2500 MT
- Total virgin plastic produced: 8300 MT
- Recycled: 500 MT
- Incinerated: 700 MT

Source: by R. Geyer et al., Science Advances
And a large portion is **discarded**
Some escapes from our collection system and leaks into the environment.
How much plastic is leaking?

Visible MACROPLASTICS

8 Mt/y

Jambeck & al. 2015

Invisible MICROPLASTICS

1.3 Mt/y

Boucher and Friot 2017

3%
The amount of plastics in the environment will continue growing rapidly under the status quo.

Global plastic production trends

- **Past**: Plastic production 2016
  - 335 Mt/y

- **Future**: Expected plastic production 2030
  - 700 Mt/y

Source: Ryan, A Brief History of Marine Litter Research, in M. Bergmann, L. Gutow, M. Klages (Eds.), Marine Anthropogenic Litter, Berlin Springer, 2015; Plastics Europe.
WHY DO WE NEED BETTER METRICS?
The Plastic Leak Project

A collaborative, multi-stakeholder initiative to identify, measure and develop scalable solutions to close the tap on leakage in the plastic loop.

- Measure leakage from the circular plastics economy.
- Deliver meaningful and robust metrics with a streamlined methodology.
- Evaluate and develop scalable solutions to reach near-zero leakage.
- Guide companies to move from assumption-based to fact-based actions.
- Create and nurture a community of leaders committed to solving the visible and invisible plastic leakage problem.
Who is on board?

Strategic committee

Quantis  ea  IUCN  Life Cycle Initiative  UN environment  wbcasd

Member Organizations

adidas  Arla  Braskem  Cotton Incorporated  cyclos  CITEO  DECATHLON  DOW  EASTMAN  enel x  ETB Ma  European bioplastics  IWTO  MARS  McDonald's  PlasticsEurope  Radici Group  Sympatex  The Woolmark Company
Advisory board
ARLA’s case study
What perspective on plastic leakage?

- **Key results**: What is the total leakage along my value chain? In which environmental compartment?
- **Value chain**: Where does the leakage occur along the value chain?
- **Country**: In which country does the leakage occur? What is the plastic leakage intensity?
- **Market**: Which market is responsible for the leakage? Which products are contributing to the leakage?
- **Product**: Which polymers are contributing to the leakage? How much plastic will be remaining after 1 year?
What is the total leakage along my value chain?

99'466 t/y  
Macroplastic used

1'355 million tkm  
Road transport

2'845 t/y  
Leakage into other environmental compartments (soil, river, sediments and air)

1'009 t/y  
Leakage into ocean

Plastic leakage intensity 4%
The plastic leakage occurs mainly when the plastic packaging is disposed at its end-of-life.
In which country does the leakage occur?

Accounting for the end-of-life plastic leakage where it occurs

- **Total leakage:** 3'690 t/y
  - 1'410 t/y High income (31%)
  - 1'100 t/y Upper middle income (30%)
  - 1'350 t/y Lower middle income (36%)
  - 100 t/y Lower income (3%)

The end-of-life leakage occurs mainly in Nigeria, China and Bangladesh.
Ready to assess your plastic leakage?

Get started to drive solutions and influence the future

Contact us

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PLP framework

- LOSS from different sources
- TRANSFER through different pathways
- INITIAL RELEASE in different compartments
- REDISTRIBUTION among compartments
- FINAL RELEASE in different compartments
Losses, transfer pathways and release compartments

Microplastics
- Tyre
- Synthetic textiles
- Plastic pellets
- Other sources

Macroplastics
- Plastic packaging
- Plastic products
- Other sources

Compartment
- Waste water pathway
- Road runoff pathway
- Air pathway
- Direct pathway
- Uncollected waste
- Poorly managed waste

TRANSFER pathway

INITIAL release compartment
- Release to oceans
- Release to freshwater
- Release to soils
- Release to other terrestrial environment
- Release to air

REDISTRIBUTION

FINAL release compartment
- Release to oceans
- Release to freshwater
- Release to soils
- Release to other terrestrial environment

LEAKAGE metric
- LEAKAGE TO OCEANS (t)
- LEAKAGE TO OTHER COMPARTMENTS (t)

Considered in the model
Not considered in the current version of the model

Collected by waste pickers

Other sources
Accounting plastic fate

- **LOSS** from different sources
- **TRANSFER** through different pathways
- **INITIAL RELEASE** in different compartments
- **REDISTRIBUTION** between compartments
- **FINAL RELEASE** in different compartments
- **DEGRADATION** of the plastic

**Inventory**
- LEAKAGE Metric
- LEAKAGE TO ENVIRONMENT $t_0$

**Partial fate**
- LEAKAGE TO ENVIRONMENT $t$

**Full fate**
- LEAKAGE TO ENVIRONMENT $t+1$