Stop the Leak: Addressing Plastic Leakage in Your Supply Chain
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Today’s Speakers

Dr. Jesse Daystar
Vice President and Chief Sustainability Officer

Laura Peano
Senior Sustainability Consultant and Plastic Leak Project lead

Dr. Anna Kounina-Massé
Senior Sustainability Consultant
Microplastics awareness is growing

Microplastics pollution is having an effect on clothing purchases

19% China

27% U.S.

59%

AWARE OF MICROPLASTICS POLLUTION

60%

MICROPLASTICS POLLUTION WILL AFFECT MY PURCHASES

Source: Cotton Incorporated’s Lifestyle Monitor™ Survey
The average person ingests over 5,800 particles of synthetic debris annually from those 3 sources alone.

159 global tap water samples: 81% of tap water sampled contained various levels of synthetic microplastics.

12 U.S. beer brands sampled: all beer sampled contained various levels of synthetic microplastics.

12 sea salt brands sampled: all salt sampled contained various levels of synthetic microplastics.
US Plastic Bans

- California was the first state to ban plastic bags.
- Hawaii has four statewide plastic bag restrictions in place, essentially a statewide ban.
- Florida prohibits future legislation that limits the use of polystyrene products, while a lawsuit over the validity of a statewide preempting local Florida bag laws is pending.

In Colorado, an industry group alleges that a 1993 statute preempts local plastics bans.

New York’s state ban on plastic bags at retailers takes effect in 2020, while local jurisdictions are preempted from addressing bags at restaurants.

Maine has a ban on single-use polystyrene containers.

BRIAN E. JACOBS, NSAFF

SOURCES: PLASTIC POLLUTION COALITION, PLASTICBAG.LAWGFD, SURFRIDER FOUNDATION
Plastic Research Engagement

Better data leading to better decisions
More sustainable apparel industry
Guidance and Case Study Results
Tackling plastic pollution

Introducing science-driven guidelines to address plastic leakage in corporate value chains.

The Plastic Leak Project, co-founded by Quantis + ea
1. Why address plastic leakage?
2. What is the Plastic Leak Project?
3. How to gain insights from a plastic leakage assessment:
   • Arla Foods case study
   • Sympatex case study
4. What’s next + Q&A
WHY IS PLASTIC LEAKAGE AN ISSUE?
The world is watching
Since the beginning of the plastic production era (~1950), we have produced 8300 Mt of plastic…
...and only 7% of the world’s plastic has been recycled (1950-2015).

<table>
<thead>
<tr>
<th>Total virgin plastic produced</th>
<th>8300 Mt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Still in use</td>
<td>2500 Mt</td>
</tr>
<tr>
<td>Recycled</td>
<td>500 Mt</td>
</tr>
<tr>
<td>Incinerated</td>
<td>700 Mt</td>
</tr>
</tbody>
</table>

Source: R. Geyer et al., Science Advances
And a large portion is **discarded**

- **2500 Mt** Still in use
- **8300 Mt** Total virgin plastic produced
- **4600 Mt** Discarded
- **500 Mt** Recycled (7%)
- **700 Mt** Incinerated

Source: by R. Geyer et al., Science Advances

The Plastic Leak Project, co-founded by JULICO + en
Some escapes from our collection system and leaks into the environment.

- **8300 Mt** Total virgin plastic produced
- **2500 Mt** Still in use
- **500 Mt** Recycled (7%)
- **700 Mt** Incinerated
- **4600 Mt** Discarded
- **500 Mt** In properly managed landfills
- **700 Mt** In the natural environment

Source: by R. Geyer et al., Science Advances
How much plastic is leaking?

Visible
MACROPLASTICS

8 Mt/y
Jambeck & al. 2015

3%
OF ANNUAL PLASTIC PRODUCTION

Invisible
MICROPLASTICS

1.5 Mt/y
Boucher and Friot 2017

MACROPLASTICS:
Jambeck & al. 2015

MICROPLASTICS:
Boucher and Friot 2017

The Plastic Leak Project, co-founded by QUANTICA + eE
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.
THE PLASTIC LEAK PROJECT
The Plastic Leak Project Stakeholders

Strategic Committee

- ea
- IUCN
- Life Cycle Initiative
- Quantis
- wbcasd

Member Organizations

- adidas
- Arla
- Braskem
- CITEO
- Cotton Incorporated
- cyclos
- DECATHLON
- Dow
- EASTMAN
- enel x
- European Bioplastics
- ETB
- IWTO
- McDonalds
- PlasticsEurope
- Radici Group
- SympaTex
- THE WOOLMARK COMPANY

Advisory Committee

- Carbon Trust
- CIRAIG
- Common Seas
- European Commission Joint Research Centre
- FSLCI
- GCRL (Global Circular Renaissance Lab)
- ITQ
- MIT
- National Geographic
- Plastic Soup
- RMIT
- Systemiq
- WWF
The Plastic Leak Project Guidelines

- First science-based methodology
- To map, measure and forecast plastic leakage along the value chain
- With industry-specific guidance and metrics
Bolstering **business value** with plastic leakage assessment

The plastic leakage methodology empowers companies to:

- Minimize risks
- Innovate product + supply chain management
- Strengthen brand reputation
- Build trust with stakeholders
Plastic Leak Project

Methodological guidelines
The Plastic Leak Project Guidelines identify the main sources and pathways of plastic leakage, how much leakage occurs and where it ends up.

Download the guidelines: https://quantis-intl.com/metrics/initiatives/plastic-leak-project/
The results of a plastic leakage assessment can be used by:

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

To:
- Define priorities
- Guide eco-design efforts
- Track progress
- Communicate credibly about environmental performance
What perspective on plastic leakage?

- What is the total leakage along my value chain?
- Where does the leakage occur along the value chain?
- In which environmental compartment?
- In which country does the leakage occur?
- What is the plastic leakage intensity?
- Which market is responsible for the leakage?
- Which products are contributing to the leakage?
- Which polymers are contributing to the leakage?
- How much plastic will be remaining after 1 year?
ARLA’s case study
What is the total leakage along my value chain?

Key results

99'466 t/y
Macroplastic used

1'355 million tkm
Road transport

4% Plastic leakage intensity

2'845 t/y
Leakage into other environmental compartments (soil, river, sediments and air)
98% Macro

1'009 t/y
Leakage into ocean
99% Macro

= 995 t/y

The plastic leakage occurs mainly when the plastic packaging is disposed at its end-of-life.

Where does the leakage occur along the value chain?

In which environmental compartment?

- **Value chain**
  - **Packaging production**: 9 t/y (Ocean 17%, Other terrestrial environment 5%)
  - **Farms and production site**: 124 t/y (Ocean 5%, Other terrestrial environment 95%)
  - **Transport**: 32 t/y (Ocean 21%, Other terrestrial environment 57%)
  - **Product end-of-life**: 3,690 t/y (Ocean 27%, Other terrestrial environment 73%)

In which country does the leakage occur?

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

The end-of-life leakage occurs mainly in Nigeria, China and Bangladesh

Country

- Nigeria: 695 t/y
- China: 659 t/y
- Bangladesh: 354 t/y
- United Kingdom: 343 t/y
- Germany: 239 t/y
- Romania: 78 t/y
- Oman: 233 t/y
- Dominican Republic: 95 t/y
- Philippines: 96 t/y
- Germany: 239 t/y
- Oman: 233 t/y
- Dominican Republic: 95 t/y
- Philippines: 96 t/y

Country

- High income (31%): 1,140 t/y
- Upper middle income (30%): 1,100 t/y
- Lower middle income (36%): 1,350 t/y
- Lower income (3%): 100 t/y

Total leakage: 3,690 t/y

SYMPATEX case study
What is the total leakage along my value chain?

**Key results**

- **440 g**
  - Macroplastic used
  - Jacket and losses: 420 g
  - Packaging: 20 g

- **2’000 km**
  - Road transport

- **360 g**
  - Textile washed

- **116 g**
  - Leakage into other environmental compartments
  - 99% Macro

- **6 g**
  - Leakage into ocean
  - 99% Macro

**28% Plastic leakage intensity**

What is the total leakage along my value chain?

28% Plastic leakage intensity

Key results

99% Macro leakage into other environmental compartments

Leakage into ocean

116 g

6 g

440 g

Macroplastic used

Jacket and losses: 420 g

Packaging: 20 g

2'000 km Road transport

Textile washed

Equivalent to

5 times during production

10 times during textile use

Leakage occurs mainly during the product end-of-life when the jacket is disposed.

In which country does the leakage occur?

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

50% of the collected textiles are considered to be exported for a second life
- 40% downcycled
- 10% incinerated

After their second life, they are considered to be treated as municipal solid, and are mismanaged if the waste treatment infrastructure is inadequate

The end-of-life leakage occurs mainly in Africa, Asia and Eastern Europe

Source: Import countries for used clothes based on United Nations Statistical Division (COMTRADE) represented in https://oec.world/en/visualize/tree_map/hs92/import/show/all/6309/2017/
WHAT’S NEXT?
Let’s get to work!

A plastic leakage assessment is the first step in building a metrics-based plastics strategy.
What’s next for the Plastic Leak Project?

Multi-stakeholder opportunity: extension of the PLP guidelines

**WHAT**

Phase 2 of the PLP to extend the scope of the guidelines
- Enrich and maintain data quality
- Add more granular and new sectoral guidelines
- Quantify the benefits of plastic leakage strategies and action plans
- Extend collaboration to more stakeholders

**WHY JOIN**

- Play an active part in creating actionable solutions to plastic leakage
- Team up with peers and other stakeholders
- Fill a critical knowledge and data gap
- Gain brand visibility

Get in touch with Laura Peano to find out more
Let’s move from commitments to meaningful action to tackle plastic pollution.
Please submit your final questions.

Get in touch:

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Senior Sustainability Consultant and Plastic Leak Project lead, Quantis

laura.peano@quantis-intl.com

quantis-intl.com/plastic-leak-project/
Stop the Leak: Addressing Plastic Leakage in Your Supply Chain
Biodegradability of Cotton

Biodegradability of Raw Materials

Fashion has an impact beyond the closet.

What happens when your favorite cotton shirt finally reaches the end of its functional life? In most cases, the shirt is donated, repurposed for things such as rags around the house, or thrown away.

Did you know the **average American disposes of 70 pounds of textiles each year**, according to the Council for Textile Recycling? If only about 10 pounds are donated, the remaining 60 pounds end up in landfills or other disposal environments.

Source: www.cottonworks.com
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Submit all final questions now using the Q&A box on your screen. Please take our brief survey on today’s presentation prior to exiting the webinar.