

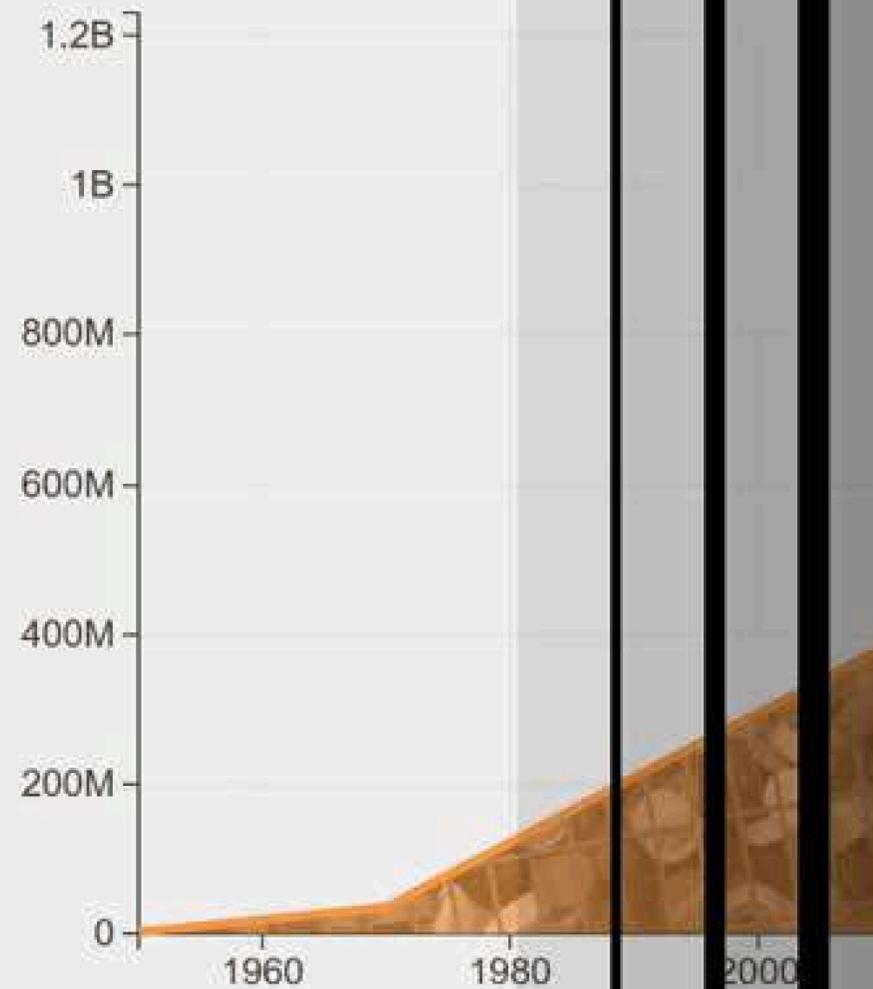
PLASTIC-FREE RIVERS

Strategies to tackle litter and microplastics in Amersfoort's canals and the Eem River, the Netherlands



Plastic production is increasing exponentially

Plastic production from 1950 to 2019 with projections



Source: OWID

Clayton Aldern / Grist / Killari Hotaru / Unsplash

Team Members



Omari

**BA. Liberal Arts
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**B.Eng. Chemical
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CHARM-Water track

Agenda

01



Research results

02



Toolkit

03



Workshop

04



Impact

Flow like a river

What **strategies** can the municipality of Amersfoort implement to **reduce litter and microplastics** in their water system?



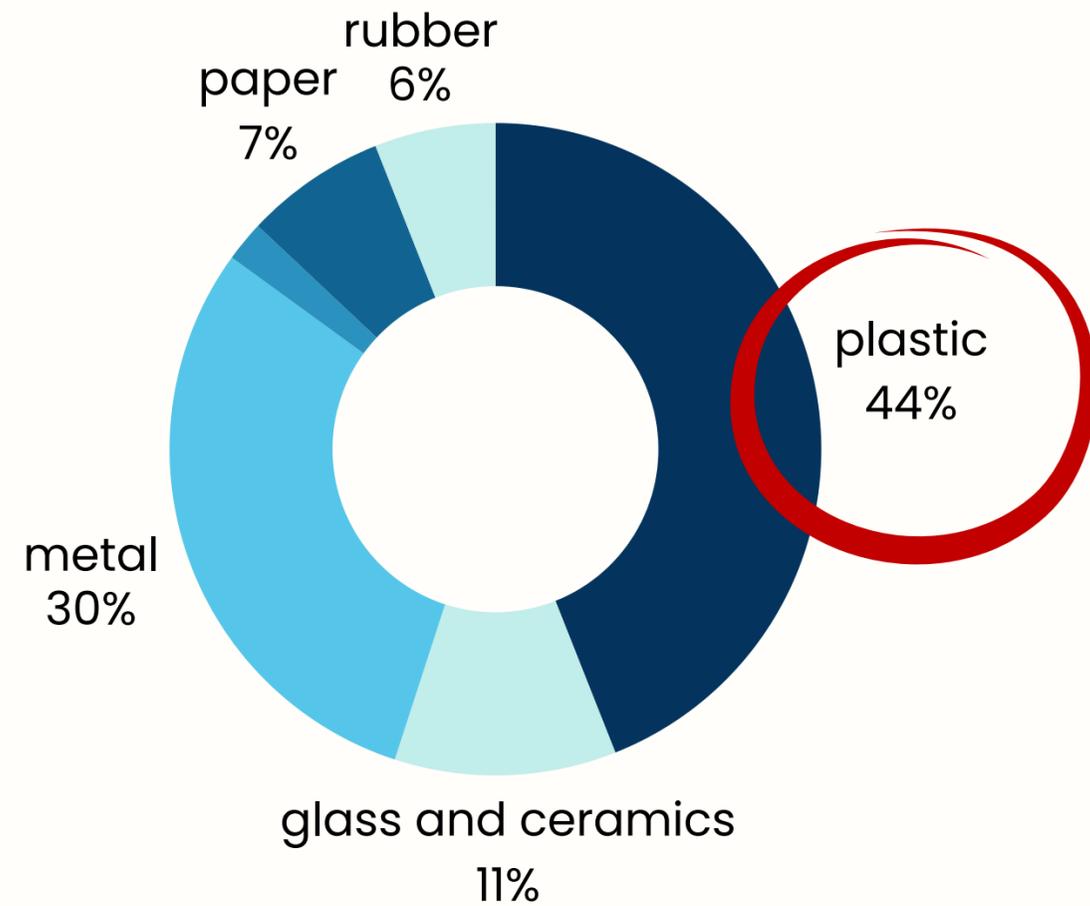
Understanding
the pollution



Creating a multi-faceted
solution pathway

Research results

Litter in Amersfoort's canals and Eem River



67% of floating litter items are **food and drink packaging**



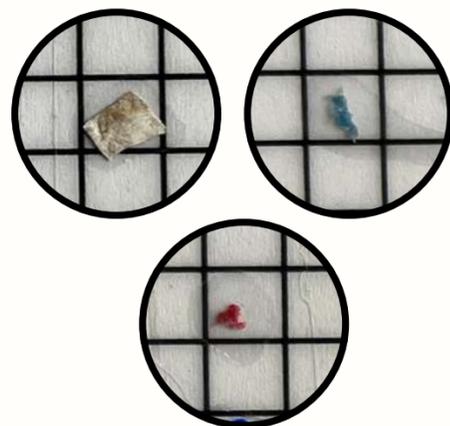
Top five most observed items

Research results

Microplastics concentrations in Amersfoort's canals and the Eem River

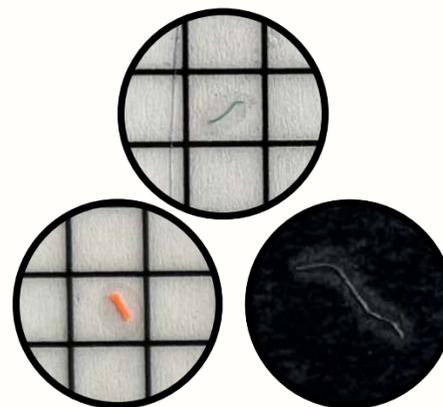


Fragments



5mm

Fibres



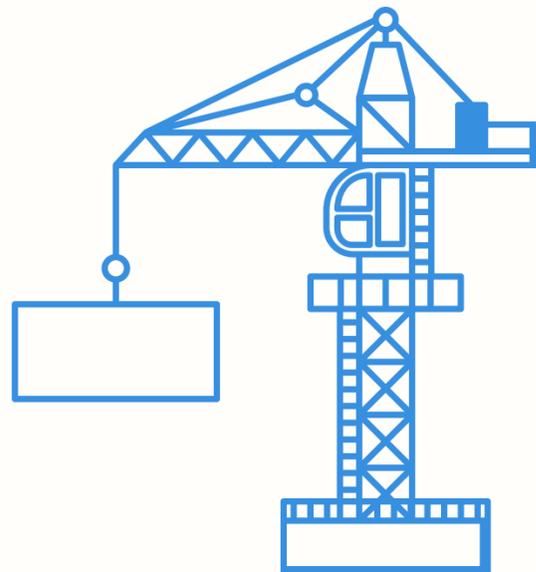
Amersfoort's canals
≈6,500 particles per km²

Eem river
≈23,500 particles/km²

Research results

Removal

Removal Technologies



Only 8% of existing removal technologies consider microplastics



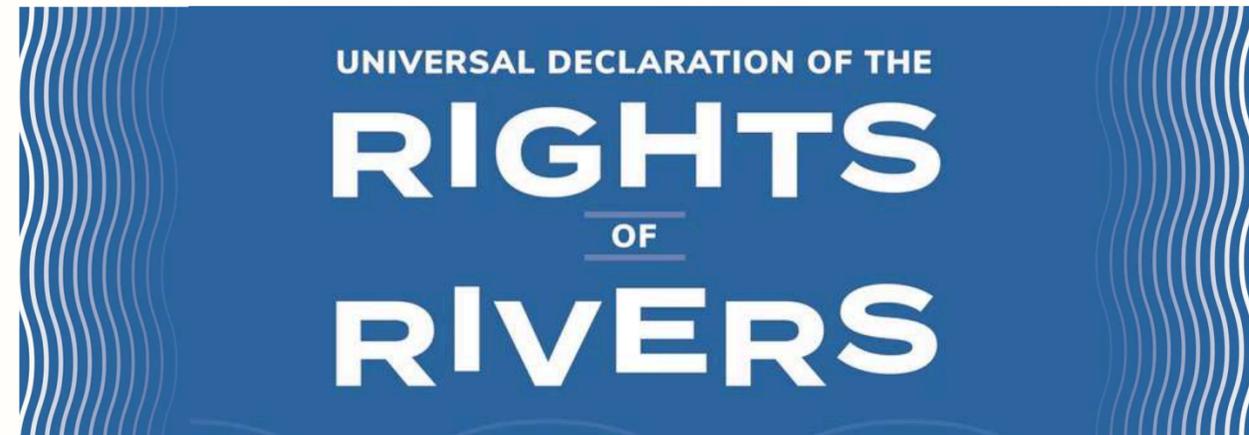
Research results

Prevention

Rights of Rivers



Build society on a foundation of respect for nature where both human and ecological needs are respected



The Rights of Rivers is a transformative step towards ecologically balanced policymaking

Research results

Prevention

Awareness &
Engagement



There is high resident awareness but a behavioural gap remains



Municipal campaigns play a crucial role



Product 1: Toolkit



Collection of Tools



Accessible online

Product 1

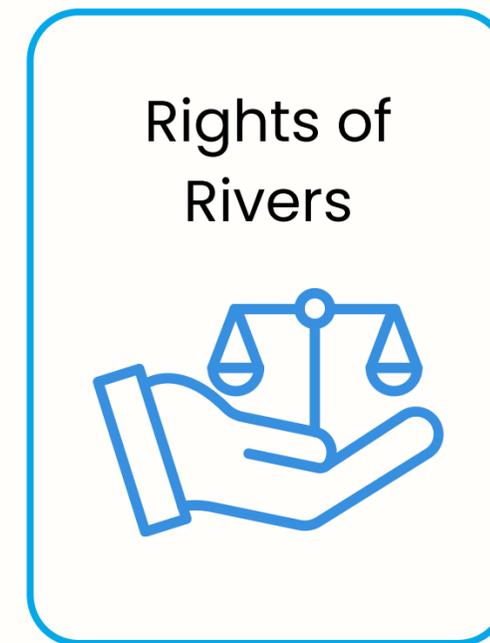
Toolkit for Tackling Waterborne Plastic Pollution



Monitoring
protocols



Assesment
framework



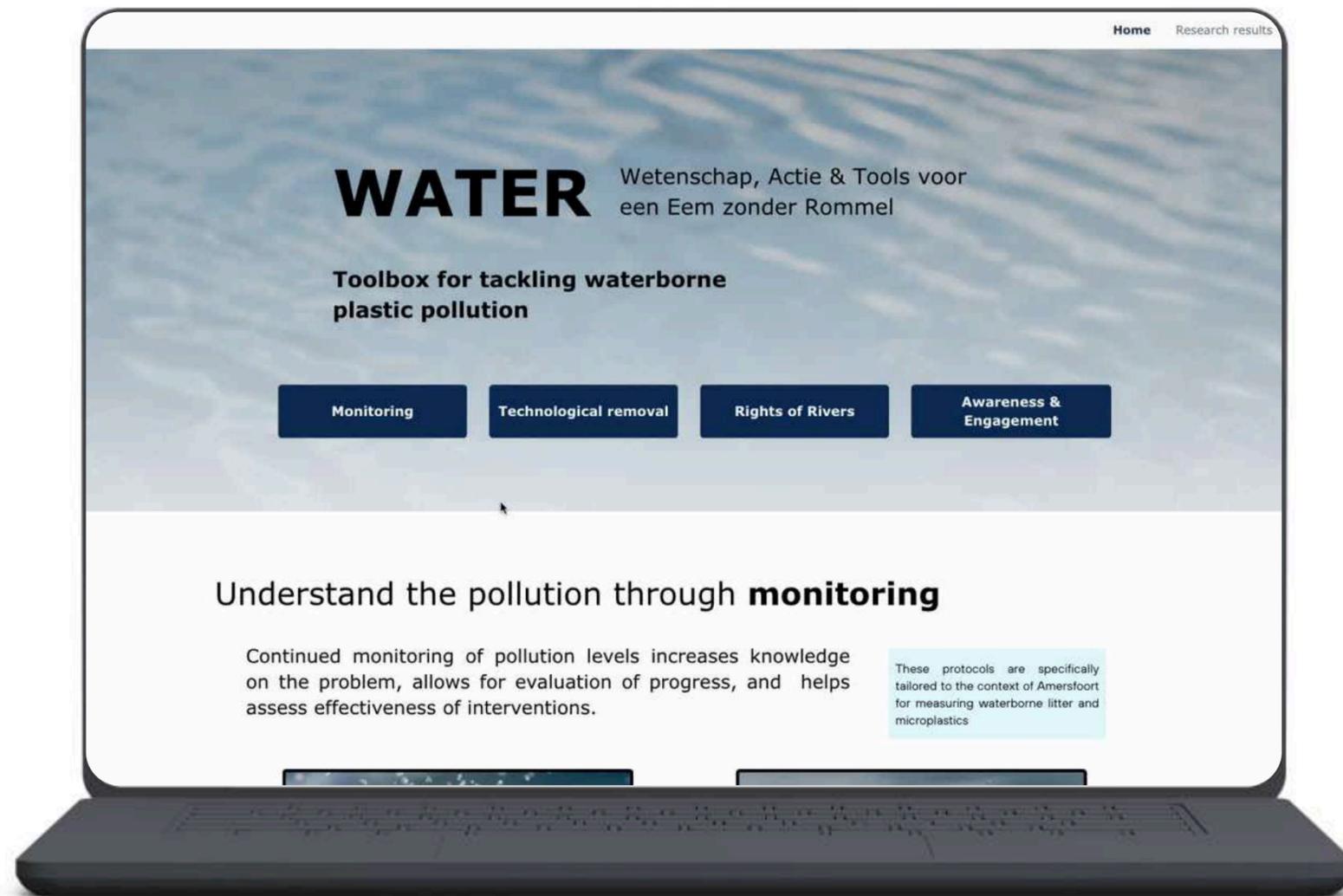
Draft legal
motion



Campaign
recommendations

Product 1

Toolkit for Tackling Waterborne Plastic Pollution



Localised data



Open-source



Evidence Based
Insights



Applicable tools

WATER – Wetenschap, Actie &
Tools voor een Eem zonder
Rommel



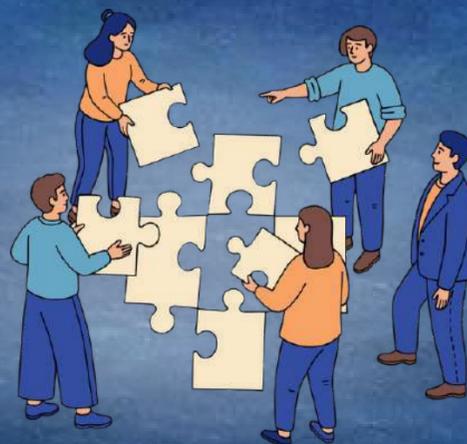
WATER – Science, Action and
Tools for a Litter Free Eem

Product 2: Workshop

WATER—Science, action & tools for river the Eem without trash



Connect



Joint action



Gain tools



Theme: Change starts with a single drop.
That drop is you!



Product 2

Workshop with Stakeholders

Collaboration to achieve change

Transdisciplinary approach

Incorporating diverse viewpoints from science, policy, and local knowledge can lead to more comprehensive solutions for complex issues.



Diverse stakeholders



Create a shared vision



Plastic-free Eem roadmap

Strategy for turning ambitious goals into realistic actions

1. Short-term actions (0–2 years)

Focus: awareness, pilots, quick wins, baseline data.

Awareness and education on plastics, alternatives and waste through campaigns, school/citizen programs with focus on children & youth

Baseline monitoring of microplastics pollution with simple systems and citizen science

Immediate river actions through resident and tourist clean-ups and rights of rivers

2. Mid-term actions (2–5 years)

Focus: scaling up, institutionalisation, and structural change.

Plastic prevention through reduction of single-used plastics and promotion plastic-alternatives

Policy and governance interventions to regulate production and subsidise alternatives

Systematic cleaning through technical innovations for catching litter and microplastics

Waste management through improved recycling systems

Cooperation with companies, horeca and communities

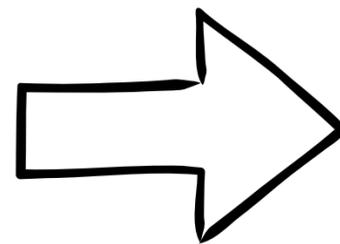
3. Long-term actions (5–15 years)

Focus: system transformation, advanced technology, and strong regulation.

Legislation on implementation of a plastic-ban and pollution sanctions

Technology innovation through up-scaling systematic clean-up systems and implementation of microfiltration systems

Structured monitoring of microplastics pollution and data-driven evaluation of technologies and policies



Product 2

Workshop with stakeholders



Commitment bookmarks

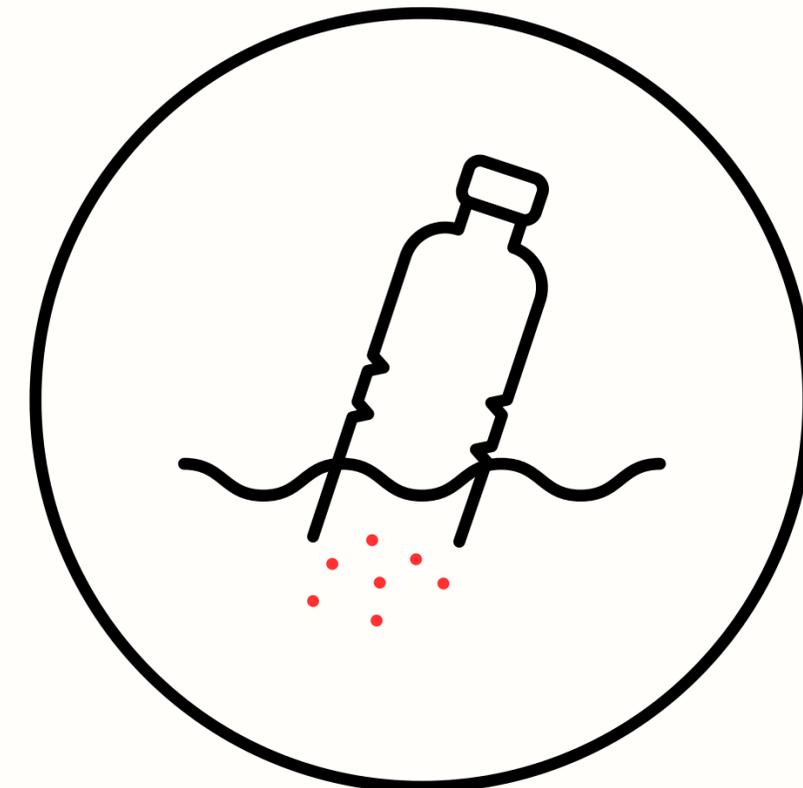
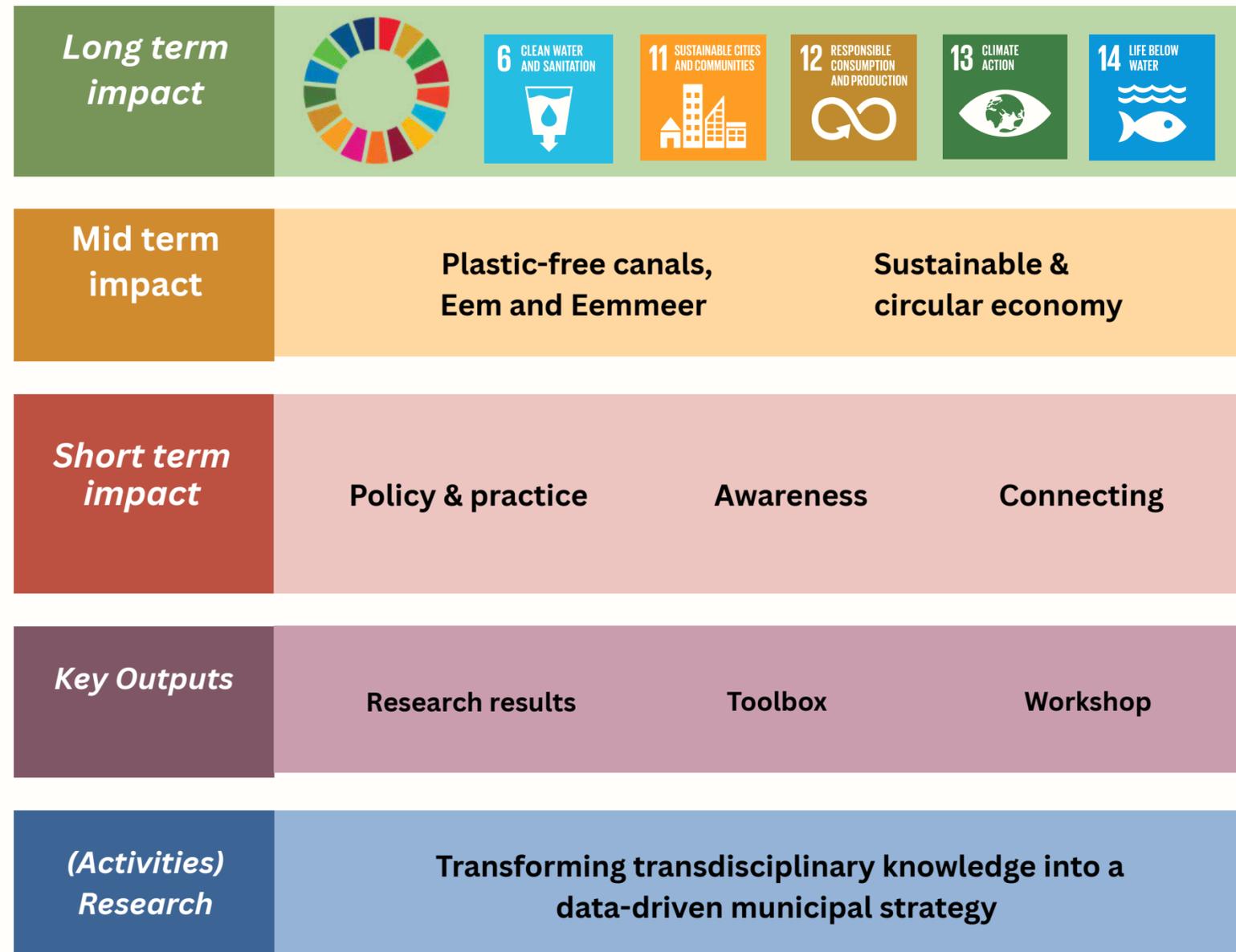
Turning ideas into action



Informal networking

Impact

From research to impact



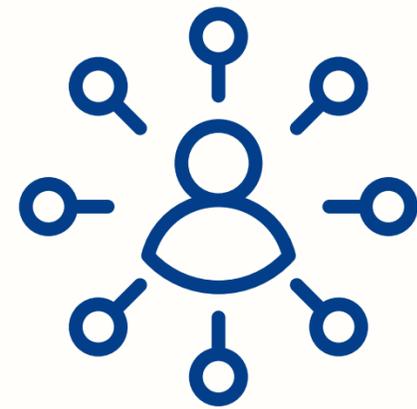
Small steps towards a circular and plastic free future for Amersfoort

Impact

From research to impact



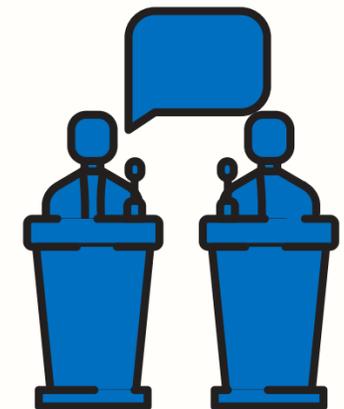
Awareness



Connecting stakeholders



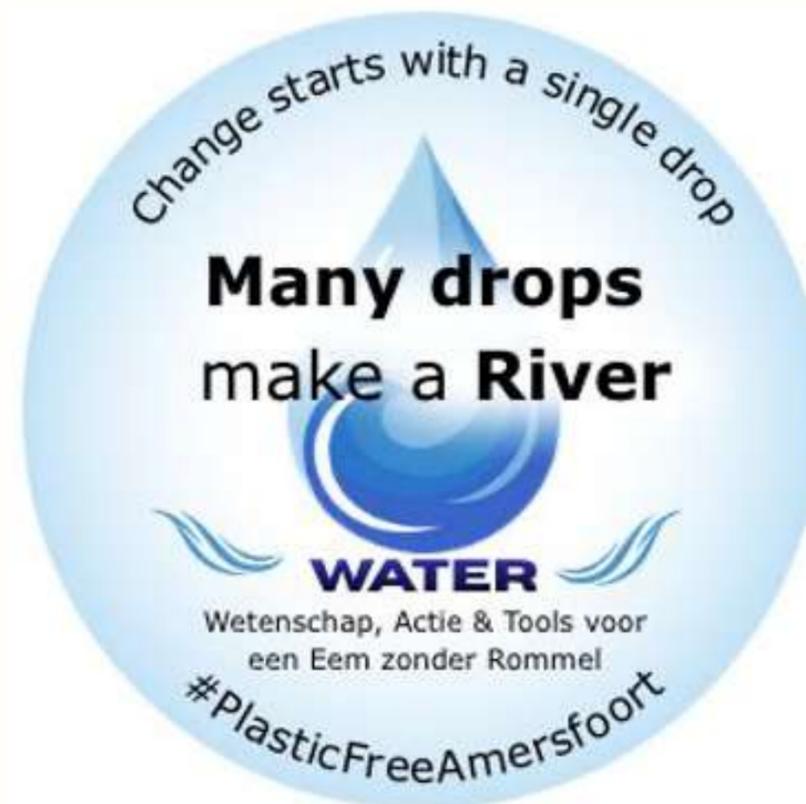
Community building



Political impact

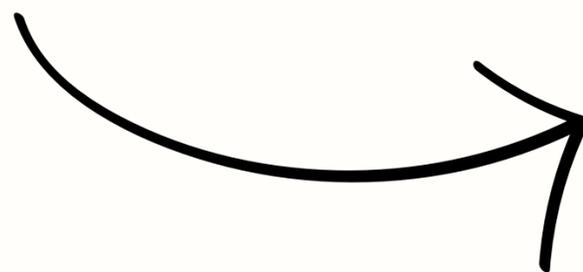


THE START OF A PLASTIC-FREE AMERSFOORT



Thank you for listening!

Scan the QR-code or type the link below to discover more of our research



water-eemzonderrommel.com

