

CityLoops: citizen involvement in NL

Inspirational practice & scaling opportunities – an overview

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Dr Hilke Bos-Brouwers, Wageningen Food & Biobased Research



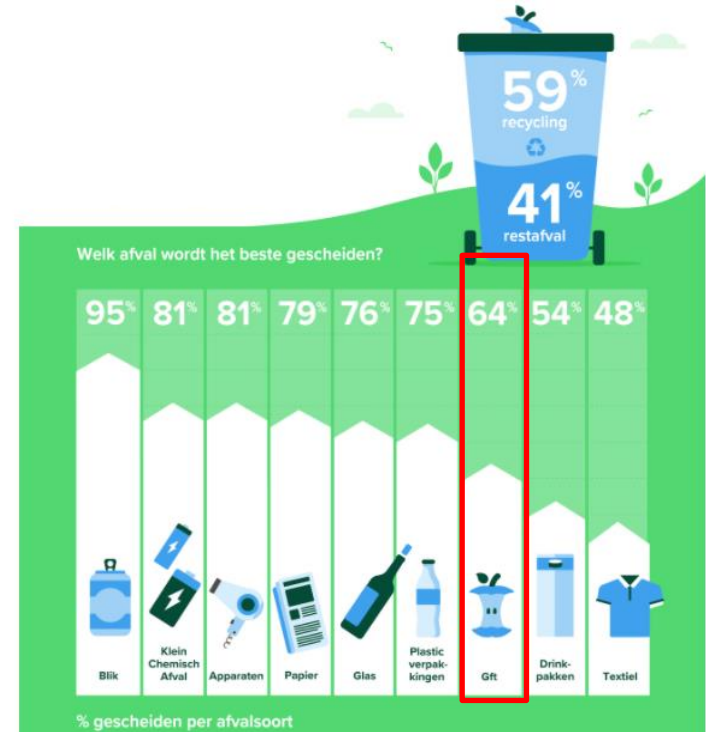
Source separated organic household waste in the Netherlands

Netherlands:

- 524 kg/cap.yr household waste (2020)
- Higher urbanisation degree = less overall waste
- 60% source separated
- Target: 170 kg/cap.yr MSRW → 30 kg/cap.yr by 2030
- Organic household waste: 140 kg/cap.yr, of which 90 kg/cap.yr source separated (64%)
- Highest urbanisation: 32 kg/cap.yr
- Lowest urbanisation: 152 kg/cap.yr

→ How to organize?

→ How to achieve behavioural change that sustains source separation at the desired quality & volumetric levels?



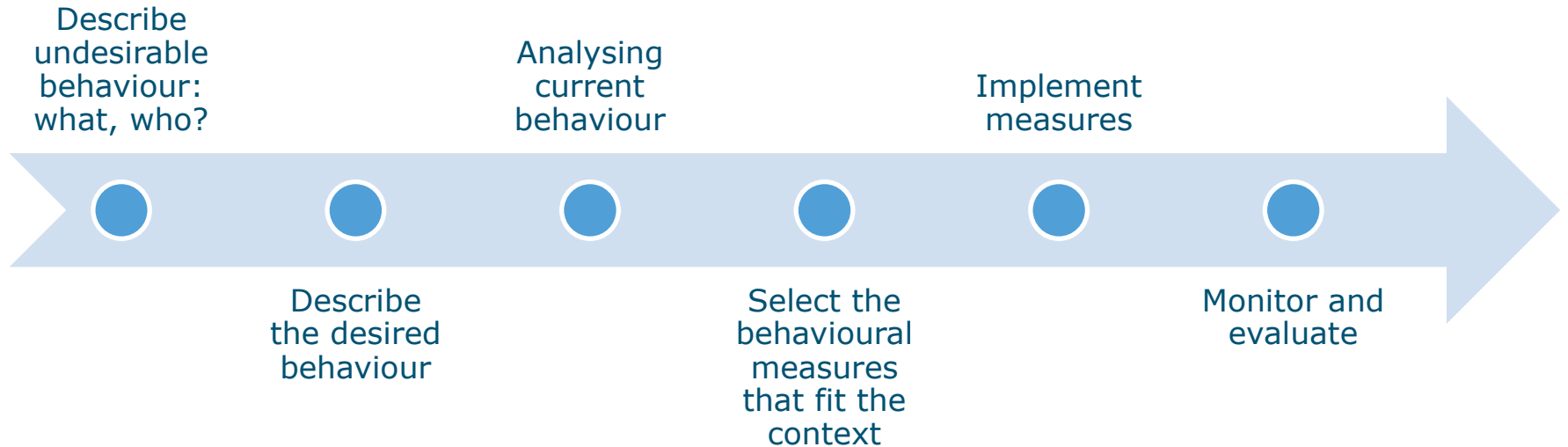
Insights from literature on determinants for source-separation behaviour

Determinants relate to

- Motivation
 - Social norms
 - Self-efficacy
 - Socio-demographic factors
 - Contextual factors
 - **Organisation of collection system**
- Ease of use, user-friendliness
 - Distance to drop-off site, accessibility
 - Attractiveness of collection system design
 - Hygiene issues
 - Collection frequency / collection days
 - Reliability of collection
 - Correctness of administration
 - Maturity of collection system
- Size and type of collection bin
 - Number of materials to be collected separately
 - External alternatives
 - Tariff system
 - Sanction / reward system
 - Feedback on collection/reuse performance
 - Frequency of user-oriented communication

Information provision at national level

Step-by-step guidance



Source: [VANG](#), 2016

Pilots on waste separation in high-rise buildings

Based on behavioural change insights

1. Facilitating storage at home
2. Changing distance to waste collection point
3. Setting personal goals & activation
4. Performance feedback
5. Influencing attitude (use of waste separation)
6. Strengthening social standard & activation
7. Social modelling
8. Acknowledging & reducing resistance
9. Rewards: Pre-emptive gift / Promising reward

6 municipalities across NL: Almere, Amsterdam, The Hague, Schiedam, Utrecht, Rotterdam

Example: Almere

- Basic package (underground containers + information letter + 2 interventions: facilitating storage at home + social norm activation)
- 64% used the organic waste containers; with the bin 27% more, but gradually diminishing over time; 2nd intervention was disrupted due to exposure to the control group



Figure 4.1.2: Underground containers in Almere have distinct colours per waste stream.



Figure 4.1.3: Intervention 1 in Almere - "facilitating storage at home."



Figure 4.1.4: Intervention 2 in Almere - "strengthening social standards & activating."

Other (design) variants



Social modelling

Ik ga zorgen voor minder restafval

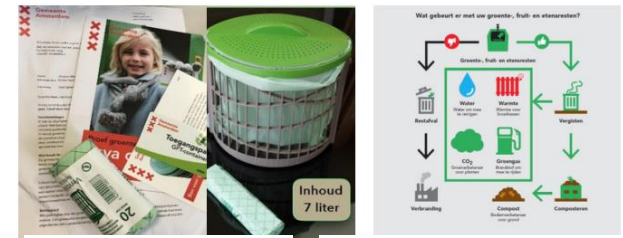
Van ... zakken
Naar ... zakken
per week

Ik doe dit door het scheiden van

- Gft
- Glas
- Papier
- PMD
- Textiel

Gemeente Rotterdam

Social standard

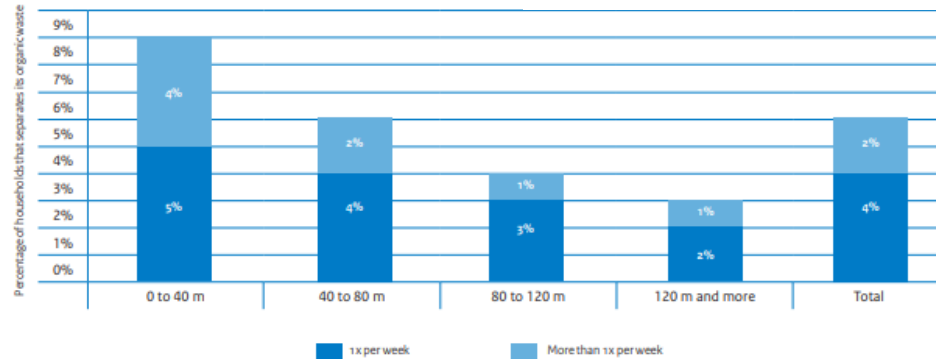


Home storage

Influencing attitude



Rewards



Distance to drop-off containers

Results

Intervention	Pilot(s) – Intervention	Behaviour – Significant	Effect size *	% Increase**	Reported behaviour	Attitude	Intention	Effectiveness
Facilitating storage at home	ALM, RDM	✓	0,14	24,48	✓	✓	✓	3
> Waste separation bin	TH	✓	0,11	31	✓	X	✓	
> Built-in bin	TH	X	x		X	X	X	
Changing distance to waste collection point	AMS, SCH	✓	x					2
Setting personal goals & activating	RDM	X	x		X	✓	X	0
Setting group goals & feedback	SCH	✓	0,08	65	X	✓	X	3
Influencing attitude (the use of waste separation)	AMS	✓	0,08	23	X	X	X	3
Strengthening social standard & activating	ALM, UTR	○	x		○	○	○	?
Social modelling	SCH	✓	0,03	27	X	✓	✓	2
Acknowledging & reducing resistance	UTR	X	x		X	X	X	1
Pre-emptive gift	AMS	✓	0,05	15	✓	✓	✓	2
Promising reward	AMS	✓	0,05	16	✓	X	X	2

X No evidence of effect

○ Intervention not implemented effectively

✓ Significant effect

Effectiveness: star rating

0 = no effect

1 = low effectiveness

2 = moderate effectiveness

3 = high effectiveness

? = inconclusive

* For facilitating storage at home, the average value was used

** Intention-to-Treat. The percentage increase is determined by both the result from the base period and the effect of the intervention. A higher percentage is therefore not necessarily the result of a stronger effect.

Figure 5.3: Overview of the interventions and their effects across six pilots.

And at Schools



Information 'suitcase' with educational material



Waste Roadshow Utrecht



[Impressie Afval'uh.pdf \(afvaleducatie.nl\)](#)

FoodBattle: diary & group-wise 'competition'



From separation to prevention of food waste at home

3 week measuring of food waste in a diary Survey (before/after)


1600 participants in various groups

- 20%
- Follow-up survey (1 yr later) showed sustained behaviour
- Developed into an individual / group-wise app incl. waste coach

To take into consideration

- The clue is not in the successful pilot, but in its sustainability and capability to change behaviour
- Some initiatives are more expensive than others
- Separate organic waste collection is a quite mature system in NL: providing opportunities for highrise areas might lead to low(er) quality, but does give citizens a feeling of self-efficacy & contributing behaviour
- Separate collection is almost always more expensive than not separating or post-separation but
 - Offsets in reducing costs for MSRW treatment or improved/added value due to higher valorisation: also very dependent on market dynamics irt 'virgin' materials
 - It is a public good and an obligatory target

Thank you for
your attention!



To explore
the potential
of nature to
improve the
quality of life