BALTIPLAST Project

Baltic Approaches to Handling Plastic Pollution under a Circular Economy Context

The BUP Symposium 2023

7 November 2023, online

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1. Introduction

- Plastic Pollution

- In the Baltic Sea Region

- 50% of plastic produced is designed for single-use purposes [1]

References: [1] https://www.unep.org/interactives/beat-plastic-pollution/?lang=EN

1.1. Have you ever wondered what happens with a single-use item after you dispose of it?

- Approximately one-third is recycled [2]

- Over 40% sent to energy recovery [2]

- Almost a quarter is landfilled [2]

End of life Scenarios of Plastic Items

34.6 % Recycling (chemical and mechanical)

42 % Energy Recovery

23.4% Landfill

References: Plastics Europe, Enabling a sustainable future, Plastics-the Facts 2021. An analysis of European plastics production, demand and waste data

References: [2] https://plasticseurope.org/knowledge-hub/plastics-the-facts-2021/

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1.2. How does plastic reach the environment?

- Littering [3]

- Flows from land carried by major rivers [4]

- Improper manufacturing processes [3]

References: [3] https://oceanliteracy.unesco.org/plastic-pollution-ocean/
[4] Plastic pollution facts and information (nationalgeographic.com)

1.3. Effects of plastic pollution on human health and the environment

- **70 %** of marine litter originates from **single-use plastic** [5]

- Microplastic

- Harmful additives leaching into the environment

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References: [5] James Workman, Plasticus Mare Balticum, A synthesized collection of five independent research reports on plastic pollution in the Baltic Sea

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How can we prevent single-use plastic from becoming waste in the first place?

2. Methodology

- Target the challenges of municipalities in the Baltic Sea Region

- Identify measures for the reduction of single-use plastics

- Identify solutions for better management of plastic waste

2.1. We looked at the problem from three different perspectives

1. Strategic and management

2. Communication and behavior change of consumers

3. Technical and technological measures for improvement of collection and treatment systems

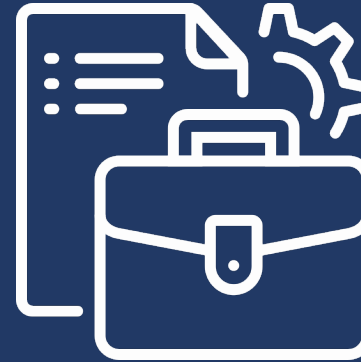# 2.2. Communication and behavior change of consumers

Target groups

Schools

Municipal Administrations

Local Businesses

Households

2.3. Innovative Plastic Inventory Tool

Products: Administration & Office	Origin of item	Quantity (number of items)	Unit of Time	Weight per Unit	Unit of Weight	Total Weight per 365 days in kg	Type of plastics - tip: look for the recycling code on your product	Avoidance of product in %	Reuse of product in %	Recycling in %	Alternative for SUP in %	Reduction of SUP in kg/ Jahr	Your Alternative (if available incl. name of the product +URL)

*Please note! Columns marked in blue are free to adjust and change (the product names and the weight in columns A+E have been collected from previous users and may serve you as an orientation). Please adjust the time and unit of weight with the help of the drop-down menu in column D and F. The dark grey column (G ... The green column (M) calculates the reduction of single-use plastics. Please indicate the rates of avoidance/reuse/recycling/ alternatives (Columns H–K) in % in comparison to the initial weight (column G). The yellow columns are meant to inspire coming users of this tool and enable them to reduce their consumption of ... tips and tricks here.

Products: Administration & Office	Origin of item	Quantity	Unit of Time	Weight per Unit	Unit of Weight	Total Weight	plastics	Avoidance	Reuse	Recycling	Alternative	Reduction	Your Alternative
	select	count		choose	weigh	choose	0.00					0.00	kg/year
adhesive tape (e.g. Tesa Film)				36	g	0.00						0.00	
A4 protective sheath				9.1	g	0.00						0.00	
fileback fastener				9	g	0.00						0.00	
battery wrappers				5	g	0.00						0.00	
printer toner (if not refillable)				55	g	0.00						0.00	
printing paper (plastic strip around cardboard box)						0.00						0.00	
Edding permanent marker				14	g	0.00						0.00	
wrapping foil (similar cling film for food)				2.2	kg	0.00						0.00	
felt tip pen						0.00						0.00	
Fineliner pen						0.00						0.00	
plastic box for pins or paper clips						0.00						0.00	
folder				26	g	0.00						0.00	
fileback fastener						0.00						0.00	
hot glue blanks						0.00						0.00	
Hygiene-gel (for hands)				100	g	0.00						0.00	
cable tie						0.00						0.00	
cash register roll (for receipts)				76	g	0.00						0.00	
ball pen				12	g	0.00						0.00	
laminating foil				1.369	kg	0.00						0.00	
bubble wrap 80m x 1m x 5mm				3.5	kg	0.00						0.00	
name sign (protection)						0.00						0.00	
Folder (big)				375	g	0.00						0.00	
plastic rails for bindings / blanks						0.00						0.00	
Plastic wrapping for copying paper						0.00						0.00	
Post-Its incl wrapping				14	g	0.00						0.00	
Post-It wrapping (6-pack)				5	g	0.00						0.00	
price tag foil				17	g	0.00						0.00	
price tag holder				2	g	0.00						0.00	
eraser						0.00						0.00	
ringbinder						0.00						0.00	
writing tape cassette				63	g	0.00						0.00	
conference folder						0.00						0.00	
paper handkerchief case				1	g	0.00						0.00	
highlighter pen				12	g	0.00						0.00	

3. Results

Timeline of the project

Preparation
2023 → Testing
2024 → Transfer
2025

Results of pre-testing:

- 2 rounds of testing

- 52,38% of participants reported a decrease in the second round

- Total reduction of **11,15 %** (in mass) after using the inventory

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3.1. Results

Total reported reduction   x   **Average plastic consumption per person each year [6]**   =   **Yearly reduction of**

11.15%   x   **20kg**   =   **2.12 kg / person**

Extrapolating to the population of Hamburg : 3 813 tones / year

Extrapolating to the population of Germany: 169 480 tones / year

References: [6] https://www.europarl.europa.eu/

4. Discussion: Is it really necessary?

- Do not aim for complete avoidance of plastic in all its forms and applications

- Find alternatives for items with a short life span

- Be mindful

Vs.

5. Future perspectives

Based on the results from testing the tool

Online open-source
solution hub

Environmental impact

assessment

6. Conclusion

Small actions pay off!

Thank you for listening!

Follow us on social media and check out our website for more exiting news about the project!

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