THE EUROPEAN PLASTICS PACT – PACKAGING FORMATS AND PRODUCTS THAT COULD DELIVER A REDUCTION IN VIRGIN PLASTIC PRODUCTS AND PACKAGING

FINAL REPORT

EUROPEAN PLASTICS PACT

DATE: 11 October 2022
Version 2

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RAMBOLL

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INTRODUCTION AND OBJECTIVES

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INTRODUCTION AND OBJECTIVES

The European Plastic Pact aims to accelerate the transition towards a European circular plastics economy bringing together multiple actors from the entire plastic value chain based on four targets:

1. **Design for reusability and recyclability:** Design all plastic packaging and single-use plastic products placed on the market to be reusable where possible and in any case recyclable by 2025.
2. **Responsible use of plastics:** Move towards a more responsible use of plastic packaging and single-use plastic products, aiming to reduce virgin plastic products and packaging by at least 20% (by weight) by 2025, with half of this reduction coming from an absolute reduction in plastics.
3. **Collection, sorting and recycling:** Increase the collection, sorting and recycling capacity by at least 25 percentage points by 2025 and reach a level that corresponds to market demand for recycled plastics.
4. **Use of recycled plastics:** Increase the use of recycled plastics in new products and packaging by 2025, with plastics user companies achieving an average of at least 30% recycled plastics (by weight) in their product and packaging range.

WRAP, as the secretariat of the EuPP, has commissioned a study to provide data, examples of innovation across Europe and recommendations for implementation of actions to achieve Target 2:

"Move towards a more responsible use of plastic packaging and single-use plastic products, aiming to reduce virgin plastic products and packaging by at least 20% (by weight) by 2025, with half of this reduction coming from an absolute reduction in plastics."

In particular, the study should provide an **overview of packaging formats/ products that offer the greatest opportunity** to reduce the need for plastic products and packaging, while avoiding unintended environmental consequences and delivering the 20% target.

Furthermore, the study should focus on the identification of **opportunities for EPP members to achieve an absolute reduction** in both the weight of plastic packaging and virgin polymer used.

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METHODOLOGY

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STUDY STEPS OVERVIEW

Objective:

Identification and collection of information sources, identification of potential organisations to approach and preparation of interview questions.

Objective:

Consultation of leading brands and/or retailers that have absolute reduction targets in place to better understand the methodology and calculation behind the reduction targets as well as the actual implementation measures.

Objective:

High-level analysis of the most relevant opportunities and measures to successfully reduce the use of plastic packaging in absolute terms.

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HORIZON SCAN

Desk research

Research focused on:

- Available information regarding the identification of potential for the reduction of plastic packaging
- Available information on possible knock-on effects of these actions
- Framework conditions for the implementation of actions

Relevant information sources include:

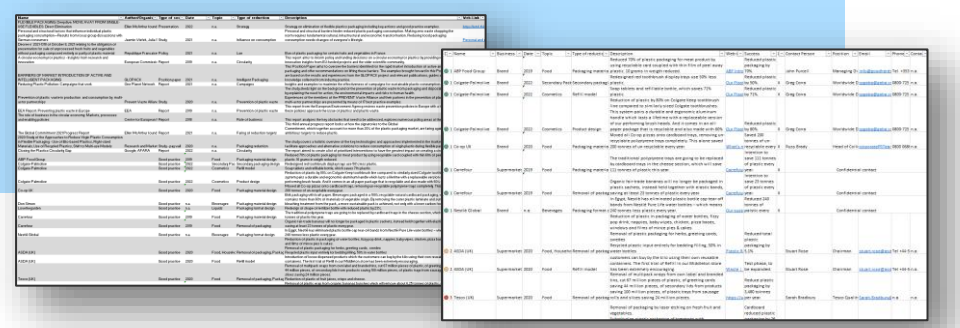
- Studies and articles provided by official authorities, especially on EU level (e. g. EU Commission, JRC)
- Information published by key plastics initiatives, as included in the European Plastics Pact roadmap
- Information identified via general web search by search engine
- Information published by other NGOs and initiatives
- Information published by associations of retailers / brands

Preparation of SH consultation

Stakeholders were identified based on available good practices.

Criteria for selection:

- Number of implemented reductions / products with reduced plastic
- Success or ambition of implementation
- Year of implementation
- Available information
- Market relevance
- Product or product category particularity
- Confidential contact information available



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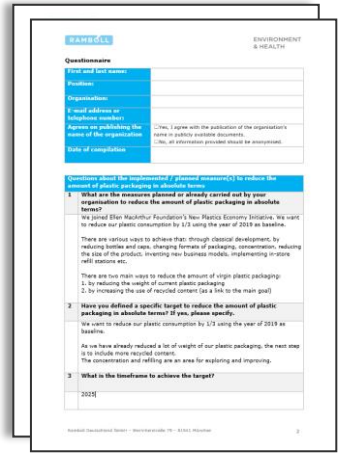
STAKEHOLDER CONSULTATION

Out of 14 requests for interviews sent out to brands and retailers having absolute reduction targets in place, **seven** interviews were carried out, based on a **questionnaire including 17 questions** divided into two parts:

1. Questions about the implemented / planned measure(s) to reduce the amount of plastic packaging in absolute terms
2. Questions about the (expected) effect of the planned / implemented measure to reduce the amount of plastic packaging in absolute terms

Specific topics investigated:

1. Measures and criteria for selection, targets, timeframe, products and materials, implementation, responsible persons, regulatory incentives, investment costs
2. Fulfilment of target, quantification of reduction, drivers/opportunities, challenges/barriers, positive and negative impacts, comments



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ENVIRONMENT & HEALTH

Questionnaire

First and last name:	
Position:	
Organisation:	
E-mail address or telephone number:	
Agrees on publishing the name of the organization	☐Yes, I agree with the publication of the organisation's name in publicly available documents. ☐No, all information provided should be anonymised.
Date of compilation	

Questions about the implemented / planned measure(s) to reduce the amount of plastic packaging in absolute terms	
1	**What are the measures planned or already carried out by your organisation to reduce the amount of plastic packaging in absolute terms?**
	We joined Ellen MacArthur Foundation's New Plastics Economy Initiative. We want to reduce our plastic consumption by 1/3 using the year of 2019 as baseline. There are various ways to achieve that: through classical development, by reducing bottles and caps, changing formats of packaging, concentration, reducing the size of the product, inventing new business models, implementing in-store refill stations etc. There are two main ways to reduce the amount of virgin plastic packaging: 1. by reducing the weight of current plastic packaging 2. by increasing the use of recycled content (as a link to the main goal)
2	**Have you defined a specific target to reduce the amount of plastic packaging in absolute terms? If yes, please specify.**
	We want to reduce our plastic consumption by 1/3 using the year of 2019 as baseline. As we have already reduced a lot of weight of our plastic packaging, the next step is to include more recycled content. The concentration and refilling are an area for exploring and improving.
3	**What is the timeframe to achieve the target?**
	2025

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HIGH-LEVEL ANALYSIS

The analysis was carried out in order to provide recommendations as to how interested stakeholders can reduce plastic packaging in the most effective way. The **recommendations** focus on the following aspects:

- Elimination of specific problematic and unnecessary items (as identified under target 1 of the EURPP),
- Specific product categories and types of materials to be focused on,
- Specific actions to be focused on.

Working steps:

- Transfer of the interview answers into an Excel spreadsheet, including additional evaluation aspects
- Add relevant information from the horizon scan into the Excel spreadsheet to close information gaps
- Analysis of the results according to interview questions and evaluation aspects
- Prioritization of results based on interviews answers and visual representation
- Drafting of conclusions and recommendations for absolute plastic reduction

RESULTS

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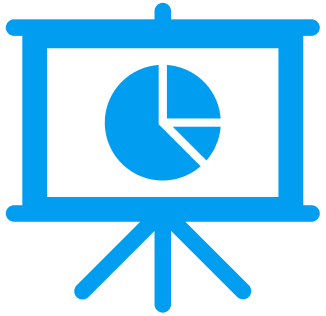
RESULT ANALYSIS

The result analysis has been carried out based on the **evaluation aspects** reported below. Information on the evaluation aspects has been collected during the stakeholder interviews and has been complemented where possible with information retrieved from the additional sources screened within the first part of the study (horizon scan):

a. Absolute reduction target
b. Measures
c. Targeted products
d. Criteria for selection of measures
e. Approaches for measure implementation
f. People involved in implementation
g. Type of measures
h. Regulatory incentives
i. Drivers/ opportunities
j. Challenges/ barriers
k. Amount of plastic reduced
l. Investment costs
m. Environmental impacts
n. Knock-on effects and future trends and opportunities



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CHALLENGES AND LIMITATIONS OF THIS STUDY

Some challenges were encountered during the high-level analysis of the information collected via the interviews and the literature scan. In particular, the **availability and comparability of data** on plastic reduction targets and related initiatives is very scarce, hindering the possibility to perform a quantitative analysis.

Main challenges:

- No or very limited quantitative data on plastic reduction was provided during the interviews, mostly because not available (initiatives still ongoing)
- No data on plastic packaging reduction with reference to specific reduction actions/measures is available in the literature
- Comparison of stakeholder answers was difficult due to non-homogeneous answers
- Vague/ not detailed answers and restraint by the stakeholders in the interviews

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A. ABSOLUTE REDUCTION TARGETS

What are the targets in place for the absolute reduction of plastic packaging?

Most targets set out by the interviewed companies have a 5 year horizon (e.g. until 2025, against a 2020 baseline) and aim at reducing the amount of plastic packaging by around 20% on average.

Some examples:

- Reduction of **total weight of own-brand virgin plastic packaging** (excluding fruit and vegetables) by **20% until 2025** using the year 2020 as baseline
- Reduction of **plastic consumption by 1/3 (tonnes) until 2025** using the year of 2019 as baseline
- Reduction of **plastic packaging by 15%** relative to market share by the end of **2022** compared to 2018 as baseline
- Reduction of **overall plastic usage by 20% by 2025**; usage of 20% recycled content by 2025
- Fully recyclable or reusable plastics packaging by 2025; **elimination of 5 billion pieces of packaging by 2025**

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B. MEASURES TO REDUCE THE AMOUNT OF PLASTIC PACKAGING

What are the measures in place for the absolute reduction of plastic packaging?

The measures implemented to achieve the targets are of different types, **depending on the specific product** they are applied to. Some stakeholder focused more on elimination of the plastic packaging itself, others rather on substitution with other materials.

The most implemented measures by brands and retailers are:

1. Elimination of **unnecessary plastic items** (e.g. cap tear-off bands, over caps, shrink wraps, additional lids, coatings etc,.)
2. **Light-weighting** (e.g. of bottles, trays, etc.)
3. **Substitution** with cardboard and change in packaging **formats**
4. **Concentration and refilling** of products

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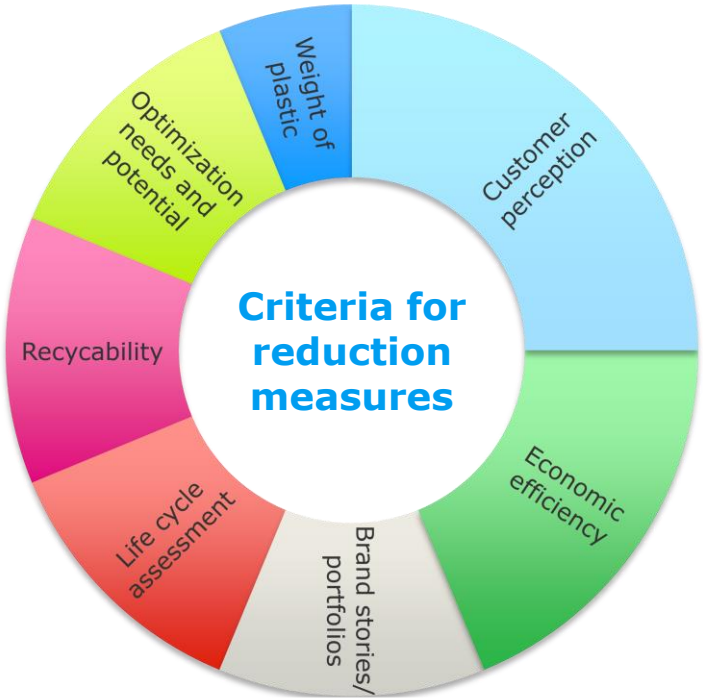
D. CRITERIA FOR DEFINING PLASTIC REDUCTION MEASURES

On the basis of which criteria products/ materials and reduction measures were selected?

The criteria listed by the interviewees for selecting the reduction measures show different approaches. The majority of the interviewed stakeholders mentioned **customer perception** and **cost/ economic efficiency** as main criteria.



1. Customer perception / acceptance
2. Economic efficiency / cost
3. Optimization needs and potentials
4. Recyclability
5. Life cycle assessment
6. Brand stories/ portfolios
7. Weight of plastic

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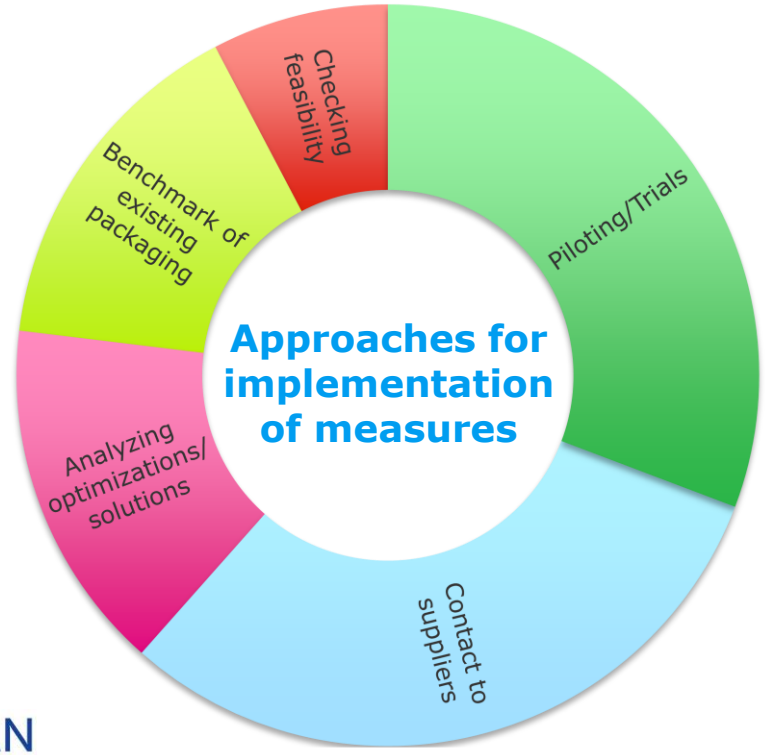
E. APPROACHES FOR IMPLEMENTATION OF MEASURES

The approaches how to implement the measures include in many cases a close contact with the **suppliers**, both for the selection of reduction measures and for the provision of packaging specifications. **Pilots and testing** periods are also very common prior to extend the measure to a wider range of products or stores.



1. Cooperation with suppliers (providing specifications, select measures together)
2. Piloting/ trials
3. Benchmark of existing packaging
4. Analyzing optimizations/solutions
5. Checking feasibility of unpackaged solutions

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F. PEOPLE INVOLVED IN IMPLEMENTATION

Who were the responsible people in the business to implement the measure(s) and to carry out the analysis?

The implementation of plastic packaging reduction measures as well as their analysis are under the responsibility of specific internal company departments, which can vary depending on the company. In some cases, responsibility is entrusted to specific personnel, and a sponsor team or group is identified.

1. **Departments:** purchase, quality, packaging, sustainability or corporate responsibility department
2. **Managers:** packaging manager, Chief sustainability officers
3. **Sponsors:** leadership team, strategy group

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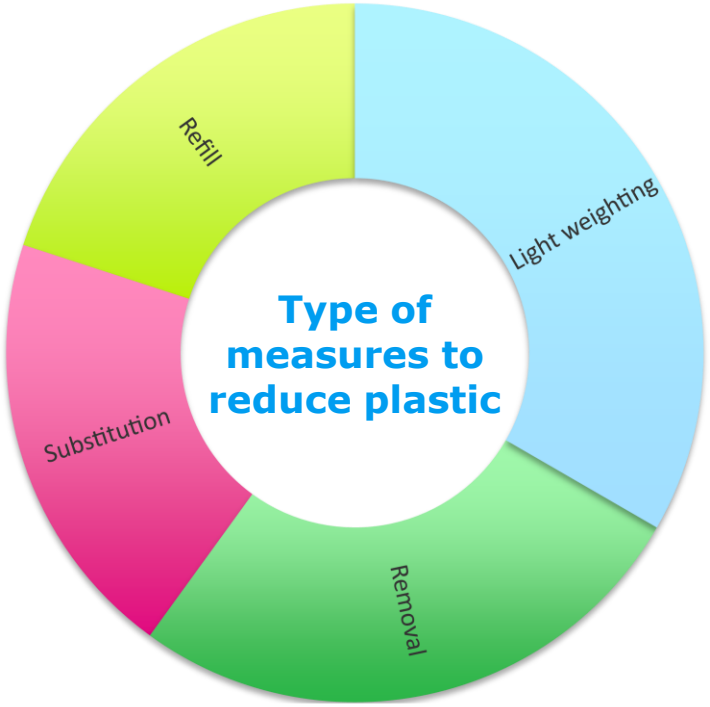
G. TYPES OF MEASURES

What type of measures were selected for implementation?

Among the four types of measures for plastic reduction, light weighting was mentioned most among the interviewed stakeholders.



1. Light weighting
2. Removal of packaging
3. Refill systems
4. Substitution

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H. REGULATORY INCENTIVES

What are the main regulatory incentives in place that promote plastic packaging reduction?

Regulatory incentives are already in place or under development both at European and national level which support the elimination of plastic packaging.

Some examples mentioned during the interviews:

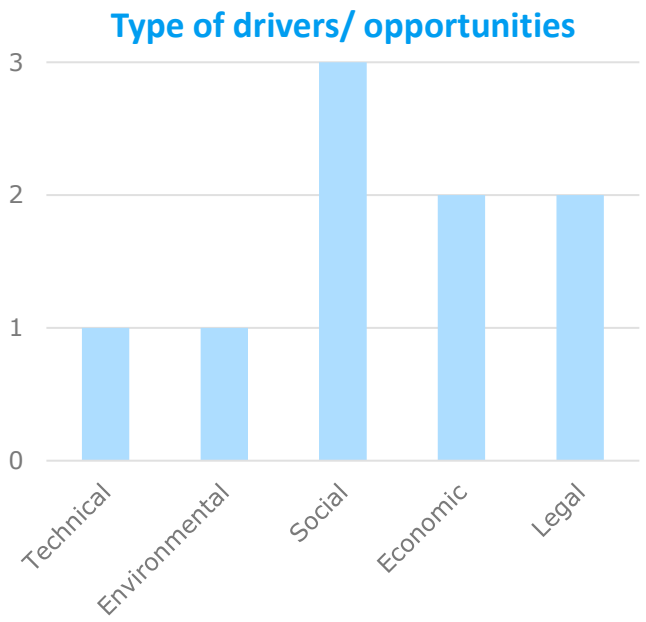
- **FR:** The **3R decree**[1] for packaging, linked to the anti-waste-law, aims at moving away from single-use plastic packaging by 2040. It enforces to reuse 10% of packaging by 2027 with sub goals quotas from 2023 (5%) to 2027 (10%). Furthermore, The decree sets also an objective to end "unnecessary[2]" packaging by 2025.
- From 2023, CITEO (French EPR) **eco-modulations** will also consider reuse management and development.
- **UK:** EPR for packaging from 2025 on with future higher taxation on single use plastic and a reuse obligation by 2025
- **EU:** PPWD sets targets for recovery and recycling on EU level, different local/national targets in EU Member States being in place/discussed for prevention of packaging waste
- **EU:** Single use plastics directive

[1]Decree n°2022-549 of 14 April 2022 on "the national strategy for the reduction, reuse and recycling of single-use plastic packaging"
[2]not having an essential technical function, such as protection, health and product integrity, transportation, or regulatory information support

I. DRIVERS/ OPPORTUNITIES FOR PLASTIC REDUCTION

What are the drivers / opportunities for achieving an absolute reduction in plastic packaging?

The drivers and opportunities for plastic reduction were quite similar among the stakeholders, with **consumer behaviour** identified as the main driver.



1. Consumer behavior change
2. Regulation
3. Sustainability
4. Marketing advantages, media attention
5. Economic benefits
6. Others mentioned: technical optimizations, responsibility towards consumers and environment, trends

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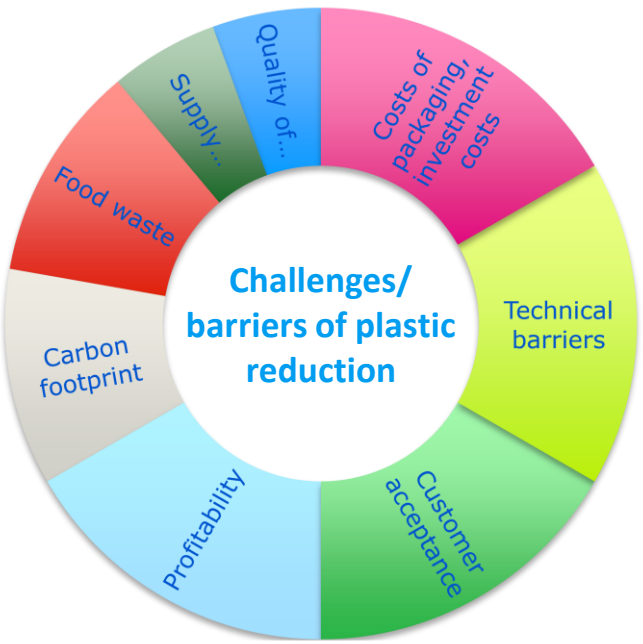
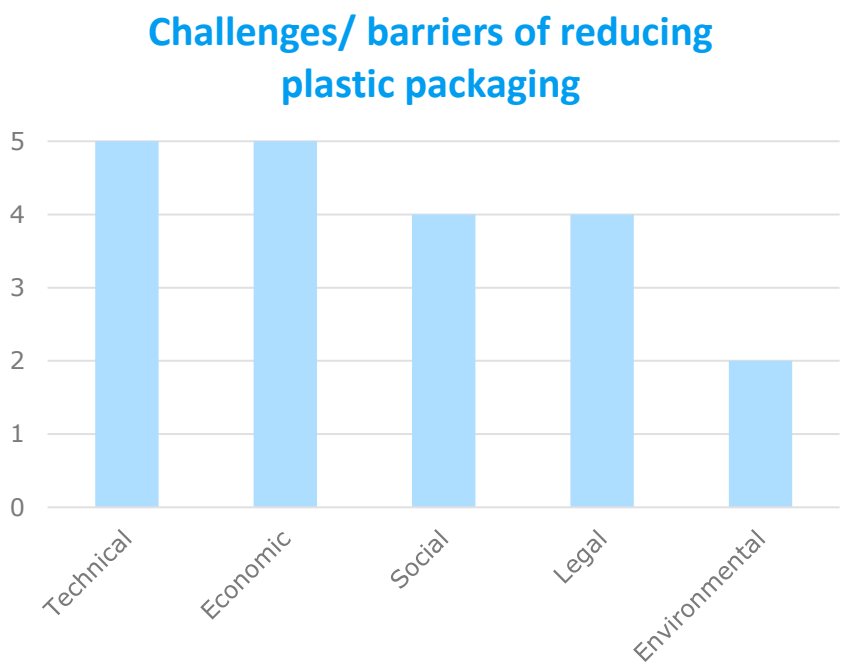
J. CHALLENGES/ BARRIERS FOR PLASTIC REDUCTION

What are the challenges / barriers for achieving an absolute reduction in plastic packaging?

The main challenges and barriers for plastic reduction mentioned by the stakeholders are **technical** and **economic**. Furthermore, **regulatory barriers** were often mentioned, with regards to e.g. waste disposal and refill systems.





1. Regulatory barriers
2. Profitability
3. Customer acceptance
4. Technical barriers
5. Costs (packaging, investments)
6. Food waste
7. Carbon footprint of alternative
8. Quality of product (ripening, rupture, handling, visibility)
9. Supply/ logistic chain changes

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K. RESULTS ACHIEVED: AMOUNT OF PLASTIC SAVED PER YEAR

How much plastic have you saved by implementing reduction measures?

Results achieved by the interviewed stakeholders:

- 260 t/a: Package band instead of plastic packaging for bananas
- 60 t/a: Elimination of plastic packaging on cucumber
- 200 t/a: Polystyrene packaging replaced by cardboard
- 35 t/a: Re-designed plastic packaging „flowpack"
- 240 t/a: Elimination of plastic bottle cap tear-off

The amount of plastic saved per year depends on many factors, inter alia on the extension of the application of the measure (number of plastic products, total initial weight of plastic products etc.). Absolute values should be therefore accompanied by **boundary conditions** in order to be comparable and to inform on the magnitude of the reduction achieved.

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L. INVESTMENT COSTS

What are the investment costs faced for the implementation of measures for an absolute reduction of plastic packaging?

Investment costs are difficult to quantify. The stakeholders interviewed showed to be reluctant in giving a precise answer to this question.

Only two stakeholder provided general information on the investment costs:

£

2 Millions Pounds

Target: 15% plastic reduction relative to market share compared to 2018 (baseline) by the end of 2022
Example of reduction: 200 t per year by replaced polystyrene through cardboard

€

Over 1 Million Euros

Target: Reducing the plastic consumption by 1/3 (tonnes) using the year of 2019 as baseline until 2025.

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M. ENVIRONMENTAL IMPACTS

What are the environmental impact of an absolute reduction of plastic packaging?

Positive environmental impacts

- Innovations linked to sustainability
- Better recyclability of substitutes
- New waste sorting possibilities
- Reduction of carbon emissions
- Fewer transports
- No plastic supply chain

Negative environmental impacts

- Introduction of other harmful materials
- Higher greenhouse gas emissions for substitution materials
- Worse Life Cycle Assessment outcome for substitution material
- Other resources consumed as packaging material

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N. KNOCK-ON EFFECTS AND FUTURE TRENDS AND OPPORTUNITIES

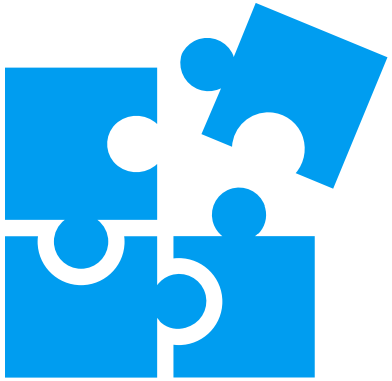
What are the potential knock-on implications of the implementation of measures and future trends and opportunities?

Potential knock-on effects:

- **Increased demand** sends signals into value chains and generates **economies of scale**
- Other **retailers following** lead in plastic reduction innovation

Future trends and opportunities:

- Upcoming regulations (EU, UK EPR)
- Advanced technology for recycled content
- Innovations for product packaging



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CONCLUSIONS AND RECOMMENDATIONS

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CONCLUSIONS

Although many companies are actively working towards the absolute reduction of plastic in packaging, there is a **general lack of available information** and comparable data. The interviews carried out with the stakeholders allowed to come to the following general conclusions:

- The beginning of the plastic packaging reduction journey is **simple and impactful**
- After an initial reduction (ca. 15%) store and product **innovations** need to follow
- There is a need for **new procedures and solutions** on the market
- Good solutions can lead to **knock-on effects** with others followed by reduced costs and easier access
- Attention must be paid to the **environmental performance** of alternative materials
- **Consumers** play a big role: packaging change needs to be designed with consumer acceptance at the forefront
- Better and uniform **regulations** supporting the change are necessary

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RECOMMENDATIONS – PRODUCT CATEGORIES

Due to the lack of comparable data on the effectiveness of plastic reduction measures, product categories where the potential to reduce plastic packaging is the greatest cannot be identified based on quantitative data. However, the interviewed stakeholders showed a good level of satisfaction for the implemented measures, and no intention to change the focus of the initiatives was reported.

Therefore, it can be concluded that reduction measures implemented on the following product categories / materials can be **expected to be a good starting point**:

- Fruit and vegetables
- Unnecessary caps, lids, plastic wraps, multipack wrapping
- Homecare and drinking bottles
- Personal care packaging
- Textile, electronic, cutlery, houseware
- Secondary packaging in general

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RECOMMENDATIONS - TYPES OF TARGETED MATERIAL AND ALTERNATIVES

Based on the results of the interviews, the following two types of material can be identified as recommended starting points, depending on the type of reduction measures:

- for light-weighing: **heavier products**
- for substitution/elimination: **hard to recycle plastics**

Lighter plastic: light, but more difficult to recycle!
Heavier plastic: heavy, but easier to recycle!

In the case of substitution, the decision on the alternative material to be used strongly depends on the product in scope. Some examples are:

- **Artificial peel** innovation (e.g. Apeel, Mori)[1]
- **Natural coating, soluble films** and packaging alternatives (Kuraray Monosol, Qwarzo, Notpla)
- **Tin plate and steel, aluminium, glass, corrugated board, cardboard, paper and fibre cast, paper-based composites or wood**

Negative impacts of alternative materials are possible because of higher weight and volume, more energy for production, poorer properties against food waste

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[1]Protective extra peels made with natural materials (for fruit, vegetables, meats, and seafood)

RECOMMENDATIONS – ACTIONS

✓ PRE-ASSESS AND ANALYZE

- Analyze and benchmark existing packaging solutions for a range of products
- Critically assess the need for packaging and analyze optimization opportunities
- Check feasibility of unpacked/optimized solutions
- For food products: ensure food waste is not increased by removing packaging
- Use life cycle assessment for assessing the impacts of changed/ substituted packaging

✓ ENGAGE AND TEST

- Educate and engage with customers at an early stage and during the entire process of change
- Engage with different company departments, buyers, suppliers, industry, members, recyclers to ensure that all relevant input is considered in the process
- Trial test changed packaging/ product prior to extend the measure to a wider range of products or stores

✓ INNOVATE AND ACT

- Start innovation for solutions and packaging optimization potential and needs
- Eliminate unnecessary plastic packaging and components
- Move to loose produce
- Offer refill stations/reuse systems (implies store changes)

✓ MONITOR AND IMPROVE

- Monitor performance of the product in terms of environmental and economic impacts (e.g. waste generation, waste recycling, economic efficiency etc.)
- Monitor customer acceptance
- Assess the results in order to optimize the impacts of the plastic reduction measures implemented

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