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Bridging investment opportunities to achieve the resilient European food packaging value chain

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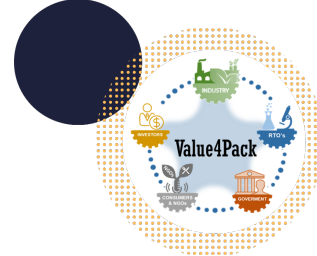
Work Package 4: Valorisation and sustainability activities

D4.2 Policy recommendation booklet

Work Package leader: LITMEA

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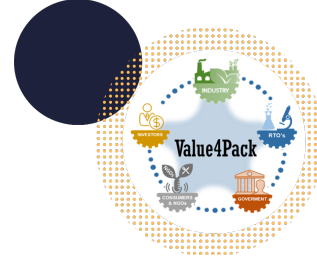
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Executive summary

[Value4Pack](#), an initiative originating from the [European S3 Partnership Food Packaging](#) and funded by the Interregional Innovation Investment (I3) program, promotes interregional collaboration and innovation within the European food packaging value chain. By empowering companies, particularly SMEs, to create new business opportunities and invest in validated solutions, the project supports the shift toward sustainable food packaging centred on prevention, reduction, reuse and recycling.

This document is Deliverable D4.2 – Policy Recommendation Booklet, prepared within Work Package 4 (Valorisation and sustainability activities) of the Value4Pack project.

The booklet consolidates two levels of policy recommendations:

- **Regional recommendations:** developed in five Less Developed Regions (Poland, Lithuania, Hungary, Slovenia, and Latvia) through value chain analyses, regional roadmaps, and stakeholder engagement. These chapters highlight local challenges and propose concrete actions aligned with the 4R principles (Refuse, Reduce, Reuse, Recycle).
- **European-level recommendations:** consolidating lessons from the regional work and enriched with insights from More Developed Regions (MDRs). These provide guidance for EU institutions to harmonise rules, strengthen cross-border cooperation, and ensure fair access to funding, monitoring, and innovation opportunities across all Member States.

Together, the regional and EU-level recommendations demonstrate how targeted actions at different governance levels can accelerate the transition to sustainable packaging. The deliverable underlines the need for:

- Harmonisation of standards, labelling, and eco-design criteria.
- Investment in recycling and reuse infrastructure, with emphasis on food-contact-safe materials.
- Empowering SMEs and clusters to innovate in bio-based, lightweight, and recyclable packaging.
- Engaging citizens through awareness campaigns, clear labelling, and digital tools.
- Strengthening cross-border systems such as deposit-return schemes, testing facilities, and monitoring platforms.

By combining regional specificity with EU-wide coordination, this deliverable provides a roadmap for reducing packaging waste, fostering innovation, and achieving the objectives of the Packaging and Packaging Waste Regulation (PPWR), the European Green Deal, and the Circular Economy Action Plan.

Deliverable D4.2 is published online. It ensures that no region is left behind in the packaging transition, and that Europe moves closer to a resilient and circular food packaging value chain.

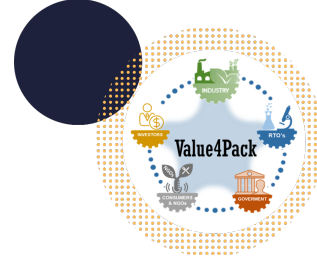




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1 Introduction

Packaging is a double-edged sword for Europe. It is essential for food safety, shelf life, and trade, yet it also drives one of the largest and fastest-growing waste streams. More than 80 million tonnes of packaging waste are generated each year, and despite progress, recycling rates remain uneven across Member States.

The forthcoming Packaging and Packaging Waste Regulation (PPWR) is a game-changer. From 2030, all packaging placed on the EU market must be recyclable, and by 2035, Member States must ensure that large-scale reuse and recycling systems are in place. These milestones are not only environmental objectives – they are also economic and social imperatives, shaping how Europe’s agri-food sector competes globally and how citizens engage with sustainability in daily life.

The transition towards sustainable packaging requires coordinated action across the **4R principles – Refuse, Reduce, Reuse, Recycle**. This means:

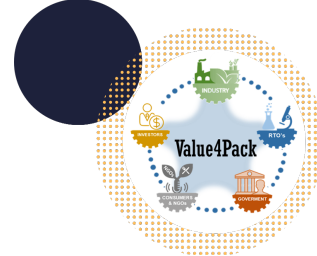
- **Technological innovation** – new mono-materials, barrier properties, coatings, and labelling methods.
- **Infrastructure investment** – upgraded recycling plants, reuse systems, and logistics solutions.
- **Consumer engagement** – clear and harmonised labelling, reliable information, and long-term awareness campaigns.
- **Collaboration across the value chain** – coordinated action between producers, recyclers, authorities, research institutions, and consumers.

Yet Europe does not start from the same line. Some countries already operate advanced deposit-return systems, high-quality recycling facilities, and strong consumer awareness campaigns. Others still face fragmented waste systems, limited innovation capacity, or SMEs unable to meet new requirements. For **Less Developed Regions (LDRs)**, these challenges are particularly acute due to gaps in infrastructure, RDI activity, and awareness. Without a coordinated EU response, the gap between frontrunner and lagging regions risks widening, undermining the Green Deal and leaving some territories behind.

The **Value4Pack project** was created to support this transformation. By connecting five LDRs – Poland, Lithuania, Hungary, Slovenia, and Latvia – with More Developed Regions (MDRs), it brings together regional insights and advanced practices. This dual perspective ensures that policy recommendations are both rooted in local realities and aligned with European ambitions.

This booklet therefore presents a combined set of regional recommendations, tailored to the needs of five Less Developed Regions, and EU-level recommendations, which translate these lessons into cohesive European measures. Together, they provide a roadmap for regional, national, and European actors to accelerate the transition towards sustainable food packaging, ensuring that no region is left behind.





2 Who is this booklet for?

This booklet is designed as a practical tool for everyone shaping the future of food packaging in Europe. It brings together recommendations that operate at two levels – **regional** (to support Less Developed Regions) and **European** (to guide Union-wide policies and funding) – but speaks with one voice to a broad community of actors.

It is intended for:

- **Policy makers at local, regional, national and EU level** – who design regulations, strategies, and funding calls.
- **European institutions** – especially the European Commission (DG REGIO, DG GROW, DG ENVI, DG RTD, DG AGRI, EISMEA), the European Parliament, and the Council, who set priorities for regulation and investment.
- **EU funding and financial bodies** – such as Cohesion Policy programmes, Horizon Europe, LIFE, InvestEU, and the European Investment Bank, which can mobilise resources for innovation, infrastructure, and SMEs.
- **National ministries and agencies** – responsible for implementing EU directives and ensuring alignment with European ambitions.
- **Municipalities and local administrations** – who manage waste collection, sorting, and awareness initiatives on the ground.
- **Clusters and European networks** – connecting businesses, researchers, and public authorities, and acting as multipliers for EU and regional programmes.
- **SMEs and food producers** – making daily design and investment decisions that determine the sustainability of packaging.
- **Research and technology organisations (RTOs)** – developing, testing, and scaling new packaging solutions in collaboration with industry.
- **Civil society, citizens and consumer groups** – whose engagement is essential for sorting, reuse, recycling, and the uptake of new packaging models.

The recommendations gathered here are meant for all those who want to turn **European ambitions into concrete action**. By working together across institutions, sectors, and borders, the EU can ensure that **no region – and no citizen – is left behind** in the transition to circular and sustainable food packaging.



3 How to read this booklet

This booklet is organised to make navigation simple and to show clearly how regional lessons translate into European action. It contains the following parts:

1. **Five regional chapters** – one for each Less Developed Region are introduced on the following pages. Each chapter includes a short context, the challenges identified, and a set of policy recommendations structured around the 4R principles: Refuse, Reduce, Reuse, Recycle.

1. Poland – West Pomeranian Voivodeship



2. Lithuania – Central and Western Lithuania

3. Hungary – Less Developed Regions of Hungary

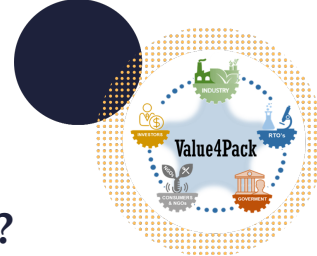


4. Slovenia – Eastern Slovenia

5. Latvia – National coverage



2. **MDR insights and best practices** – a consolidated section presenting the contributions of More Developed Regions. These insights provide practical inspiration and validation of the regional recommendations and serve as a bridge to EU-level action.
3. **EU-level recommendations** – structured around the 4R principles: Refuse, Reduce, Reuse, Recycle. Each section explains why the issue matters at European scale, what actions EU institutions can take, and what outcomes can be expected.
4. **Enabling measures** – beyond the 4Rs, the booklet highlights cross-cutting enablers such as funding instruments, monitoring tools, SME support services, and interregional cooperation platforms that are essential to make the transition possible.
5. **Closing section** – this chapter links the recommendations to broader EU priorities such as the Green Deal, the Circular Economy Action Plan, and the Farm to Fork Strategy, showing how sustainable food packaging contributes to Europe's long-term goals.



4 How did we get to these policy recommendations?

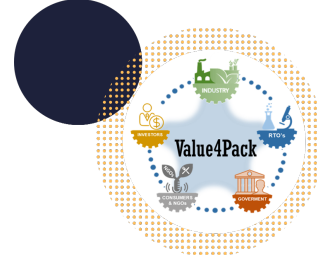
The policy recommendations presented in this booklet are the result of a structured process applied across the Value4Pack project. They combine regional analyses, stakeholder engagement, and interregional collaboration, ensuring that the proposals are both evidence-based and practice-oriented.

The steps included:

1. **Regional value chain analyses:** All project partners – both Less Developed Regions (LDRs) and More Developed Regions (MDRs) – prepared detailed analyses of their food packaging value chains, mapping key actors, challenges, and opportunities.
2. **Roadmaps in LDRs:** The five Less Developed Regions went further by preparing roadmaps that outlined bottlenecks, long-term goals, and milestones for the transition to sustainable packaging.
3. **Stakeholder engagement:** Each LDR organised workshops, interviews, and surveys with food producers, packaging manufacturers, recyclers, municipalities, consumer organisations, and research institutions. These exchanges captured the perspectives of SMEs and local actors and ensured that the recommendations reflected practical needs.
4. **Drafting of regional policy recommendations:** Based on the analyses and roadmaps, each LDR developed an initial set of recommendations tailored to its regional context.
5. **Validation with MDRs:** More Developed Regions reviewed the LDR drafts, shared good practices, and provided feedback based on their more advanced ecosystems. This ensured that recommendations were realistic, aligned with EU trends, and enriched by interregional learning.
6. **Interregional cooperation and business cases:** Practical examples and business cases developed under Value4Pack project further informed the recommendations, testing the feasibility of solutions and illustrating how cross-regional collaboration can accelerate uptake.
7. **EU-level consolidation:** The regional recommendations, MDR insights, and WP3 experiences were then consolidated to identify measures that require EU-wide action, such as harmonised labelling, funding instruments, and cross-border deposit-return systems.
8. **Final structuring:** The recommendations were grouped under the 4R principles – Refuse, Reduce, Reuse, Recycle – and complemented by cross-cutting enablers such as funding, cooperation, and monitoring. This structure ensures consistency across regions while providing a clear framework for EU institutions.

Through this shared process, the booklet delivers recommendations that are both **region-specific** and **European in scope**, demonstrating how coordinated action can accelerate the shift to circular and sustainable packaging.





5 Less Developed Regions (LDRs): Policy Recommendations

The Value4Pack project worked with five Less Developed Regions (LDRs) across Europe. These territories were selected because they combine diverse economic profiles – from industrial hubs to agricultural areas – yet face similar barriers in the shift towards sustainable packaging: limited infrastructure, low RDI capacity, and uneven public awareness.

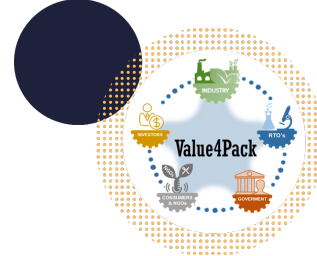
This chapter presents their policy recommendations. Each set of actions reflects local realities but shares a common ambition: to accelerate the transition to circular packaging systems in line with the EU Packaging and Packaging Waste Regulation (PPWR) and the European Green Deal.

The recommendations are grounded in regional value chain analyses, stakeholder workshops, and interregional collaboration with More Developed Regions (MDRs). They offer practical, evidence-based proposals that support SMEs, municipalities, recyclers, and consumers in taking the next steps.

The following five subsections provide insights from:

- 5.1 Poland – West Pomeranian Voivodeship
- 5.2 Lithuania – Central and Western Lithuania
- 5.3 Hungary – Less Developed Regions
- 5.4 Slovenia – Eastern Slovenia
- 5.5 Latvia – Less Developed Region





5.1 Poland: West Pomeranian Voivodeship

5.1.1 Regional context

The West Pomeranian Voivodeship is a dynamic region of north-western Poland, strongly connected to agriculture, food processing, and logistics. Its ports, food producers, and growing packaging sector give it a strategic role in Poland's economy. Yet this position also brings responsibility: aligning with the EU Green Deal and the new Packaging and Packaging Waste Regulation (PPWR).

By 2030, all packaging must be recyclable; by 2035, large-scale recycling systems must operate across the EU. Reuse and refill obligations will reshape how products are packed, sold, and consumed. For the West Pomeranian region, this means adapting production lines, distribution systems, consumer practices, and waste management infrastructure.

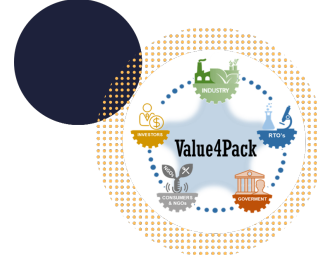
The shift will not be easy. Many SMEs and municipalities still lack the capacity to meet these requirements. Packaging innovations are not yet widespread, recyclers often cannot guarantee food-contact safety, and citizens are only beginning to change their habits. At the same time, HoReCa operators struggle with the lack of certified washing facilities for reusable packaging.

This is a time of challenge – but also of opportunity. With targeted investments, stronger dialogue, and smarter use of EU funds, West Pomerania can become a leader among Less Developed Regions in building a sustainable packaging ecosystem.

Key challenges in the region

- **Low consumer awareness** of recycling and reuse behaviours.
- **Fragmented dialogue** between producers, recyclers, municipalities, and consumers.
- **Limited recycling capacity**, particularly for food-contact-safe plastics.
- **Weak RDI activity** in packaging innovation and limited SME financing.
- **Insufficient public debate** on packaging and recycling regulations.
- **Lack of certified washing facilities** and storage solutions for reusable packaging in HoReCa.

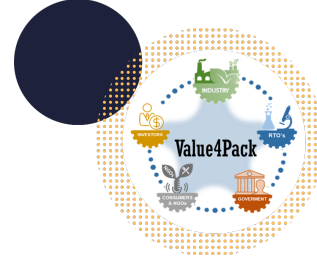




5.1.2 How can West Pomerania move forward? Policy recommendations

1. **Raise awareness of recycling and reuse:** organise recurring workshops in community centres and schools. Develop campaigns and interactive tools to demonstrate correct sorting and reuse behaviours.
2. **Improve dialogue and standardization:** establish multi-stakeholder platforms to discuss labelling, materials, and waste streams. Promote common guidelines for packaging design and recycling.
3. **Invest in recycling and sorting facilities:** expand capacity for plastic recycling, support advanced technologies (mechanical and chemical), and ensure the availability of food-contact-safe recyclates.
4. **Support RDI in packaging innovation:** provide funding for projects on mono-materials, recyclable coatings, and lightweight packaging. Facilitate cooperation between SMEs, packaging producers, and food manufacturers.
5. **Promote public debate and regulatory awareness:** create public forums and campaigns to familiarise companies with PPWR requirements. Provide SMEs with tools and guidance for eco-design and compliance.
6. **Build scalable reuse infrastructure:** support pilot projects for refillable and closed-loop packaging systems, especially in HoReCa, hospitals, schools, and events. Partner with municipalities, businesses, and citizens to encourage uptake.
7. **Establish a regional return system for reusable packaging:** introduce a regional deposit-return system for PET, glass, and reusable packaging. Ensure hygiene protocols through certified washing facilities and apply digital traceability tools.





5.2 Lithuania: Central and Western Lithuania

5.2.1 Regional context

The Central and Western Lithuania region is the country's industrial and agricultural heartland. It is home to dairy processors, meat producers, bakeries, breweries, and fruit & vegetable processors that rely heavily on packaging for both domestic and export markets. The food industry is a major driver of employment and value creation in this region, making packaging a strategic enabler of competitiveness.

While the region has a functioning deposit-return system for beverage bottles, its wider packaging landscape remains fragmented. Municipalities often apply different rules for sorting and labelling, creating confusion for both citizens and companies. Waste management systems are unevenly developed, with stronger performance in urban areas and gaps in rural municipalities.

The packaging sector is dominated by SMEs, many of whom lack the resources to invest in research and innovation. As a result, uptake of mono-materials, recyclable coatings, and lightweight designs is still limited. Cooperation between packaging producers, food companies, recyclers, and municipalities is often weak, with few joint projects or platforms for dialogue.

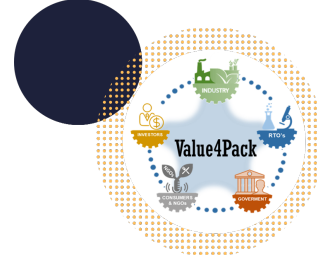
Lithuania's Smart Specialisation Strategy (S3) highlights sustainable industry and circular economy as priorities. However, in practice, regional RDI activity in packaging remains low. Stakeholders are aware of the upcoming EU Packaging and Packaging Waste Regulation (PPWR), but many SMEs are not yet prepared for its requirements on recyclability, reuse, and minimum recycled content.

For Central and Western Lithuania, the path forward is clear: harmonise systems, support SME innovation, expand reuse and recycling infrastructure, and raise awareness across society.

Key challenges in the region

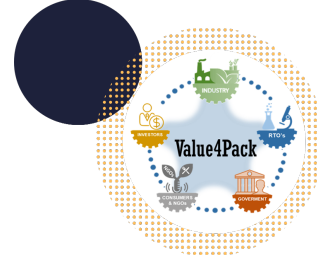
- **Low consumer awareness** on sorting, reuse and sustainable packaging.
- **Fragmented municipal systems**, with different rules for collection and labelling.
- **Limited SME capacity** for RDI and investment in sustainable packaging.
- **Weak cooperation** across the value chain (food producers, packaging companies, recyclers, municipalities).
- **Uneven waste infrastructure**, especially in rural municipalities.
- **Slow uptake of PPWR requirements**, leaving many SMEs unprepared.





5.2.2 How can Central and Western Lithuania move forward? (Policy recommendations)

1. **Strengthen consumer awareness and education:** run long-term campaigns on sorting and reuse. Use schools, communities and digital tools to engage citizens and shift behaviours.
2. **Harmonise municipal systems:** create unified rules for labelling, collection and sorting across municipalities. Support local administrations to reduce consumer confusion.
3. **Invest in recycling and reuse infrastructure:** upgrade sorting plants, expand advanced recycling technologies, and develop certified systems for reusable packaging. Ensure safe and sufficient food-contact recyclates.
4. **Support SME innovation and RDI:** launch funding instruments for SMEs to pilot mono-materials, recyclable coatings and lightweight designs. Strengthen cooperation between clusters, food companies and researchers.
5. **Build stronger cooperation platforms:** establish dialogue platforms that connect packaging companies, food producers, recyclers and municipalities. Use clusters as facilitators of cooperation.
6. **Prepare SMEs for PPWR compliance:** provide training, guidelines and advisory services for SMEs. Develop user-friendly eco-design tools to ensure compliance with new EU requirements.
7. **Pilot reuse and deposit-return systems:** support pilots for refillable and reusable packaging in retail and local initiatives. Extend Lithuania's deposit-return system beyond bottles to cover other packaging types.



5.3 Hungary: Less Developed Regions

5.3.1 Regional context

Hungary's less developed regions cover a large share of the country's territory, including Northern Hungary, the Northern Great Plain, and the Southern Great Plain. These regions are strongly agricultural, with significant food production in cereals, dairy, meat, and fruit. They also serve as important exporters to European markets. Packaging therefore plays a vital role in safeguarding food quality, enabling logistics, and supporting competitiveness.

Despite this importance, the packaging value chain is fragmented and underdeveloped. The sector is mostly composed of SMEs with limited investment capacity. Recycling infrastructure is still insufficient, particularly for plastics. Municipal waste systems are uneven across the regions, with rural areas especially lacking efficient collection and sorting facilities.

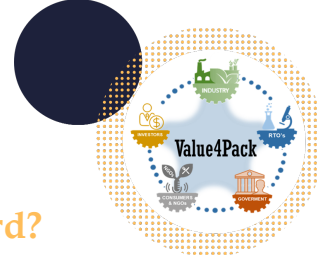
Innovation capacity is also low. While Hungary's Smart Specialisation Strategy highlights circular economy and food industry modernisation, many companies in the less developed regions remain unaware of or unprepared for the requirements of the EU Packaging and Packaging Waste Regulation (PPWR). Without clear policy support and stronger cooperation, the gap between EU targets and local capacities risks widening.

Still, there is strong potential. Hungary's food production base offers opportunities to test reuse models in retail chains and local communities. Clusters and innovation hubs can support SMEs in piloting new materials and eco-design practices. And with targeted investment in recycling facilities, the less developed regions can accelerate their contribution to a more circular food packaging system.

Key challenges in the region

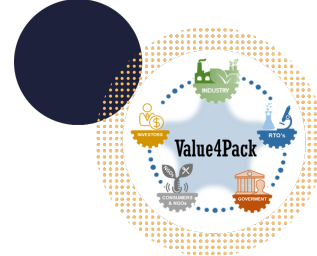
- **Low awareness** among consumers and SMEs on sustainable packaging and PPWR requirements.
- **Insufficient waste collection and sorting infrastructure**, especially in rural areas.
- **Low recycling capacity**, with a shortage of food-contact-safe recyclates.
- **SME innovation gap**, due to limited R&D investment and financing opportunities.
- **Weak cooperation** between food producers, packaging SMEs, municipalities, and recyclers.
- **Limited pilots for reuse or refill models**, despite high potential in retail and community initiatives.





5.3.2 How can Hungary's less developed regions move forward? (Policy recommendations)

1. **Increase awareness and education:** organise regional campaigns and training for both consumers and SMEs to improve understanding of sorting, recycling, and PPWR compliance.
2. **Develop harmonised waste management systems:** encourage municipalities to align labelling, sorting, and collection practices, reducing confusion for households and businesses.
3. **Invest in recycling and sorting infrastructure:** upgrade facilities in rural and urban areas, with priority for plastics recycling and the production of food-contact-safe recyclates.
4. **Support SME innovation and eco-design:** provide targeted funding for SMEs to experiment with sustainable packaging solutions such as mono-materials, recyclable coatings, and lightweight designs.
5. **Strengthen cooperation platforms:** facilitate multi-stakeholder platforms linking food producers, packaging SMEs, recyclers, municipalities, and clusters to share knowledge and launch joint initiatives.
6. **Prepare SMEs for EU obligations:** deliver advisory services, guidelines, and digital tools to help SMEs comply with PPWR requirements on recyclability, reuse, and recycled content.
7. **Pilot reuse and refill models in retail and communities:** support pilot projects in retail chains and local communities to introduce refill and reusable packaging systems, preparing the ground for wider adoption.



5.4 Slovenia: Eastern Slovenia

5.4.1 Regional context

Eastern Slovenia is a Less Developed Region with a strong agri-food base and growing packaging needs. Dairy, meat, fruit, and wine production are key economic activities, and packaging is vital for ensuring food safety, extending shelf life, and enabling exports. Yet the region's packaging value chain faces important challenges that must be addressed to align with the EU Packaging and Packaging Waste Regulation (PPWR).

Despite these strengths, the **packaging value chain in Eastern Slovenia faces structural gaps**. Municipal waste systems struggle with **dirty recyclables** and uneven sorting practices. Recycling infrastructure does not yet guarantee the supply of **food-contact-safe recyclates**. Consumer awareness of sustainable packaging is limited, and unpackaged food initiatives face barriers in hygiene and safety.

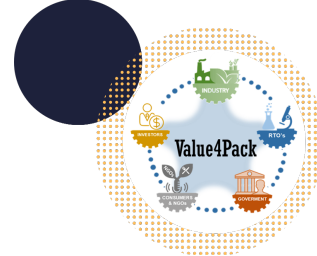
The **packaging industry is dominated by SMEs**, who lack resources for R&D and innovation. While some pilots with reusable packaging (such as crates and big bags) exist, they remain small in scale. Cooperation platforms across the value chain are weak, slowing down knowledge transfer and scaling of solutions.

Slovenia's **Smart Specialisation Strategy** highlights circular economy and sustainable food, but implementation in Eastern Slovenia remains slow. The upcoming **EU Packaging and Packaging Waste Regulation (PPWR)** raises the urgency to prepare SMEs, municipalities, and consumers for stricter rules on recyclability, reuse, and recycled content.

Key challenges in the region

- **Low consumer awareness** of sustainable packaging and recycling.
- **Uneven municipal waste systems** and high levels of dirty recyclables.
- **Shortage of food-contact-safe recyclates**.
- **Weak R&D activity and limited SME resources**.
- **Low uptake of reusable packaging models**, with fragmented pilots.
- **Concerns about food safety and hygiene** in unpackaged food and reusable systems.

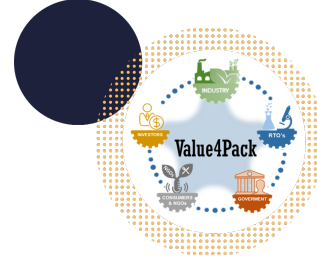




5.4.2 How can Eastern Slovenia move forward? (Policy recommendations)

1. **Raise consumer awareness and education:** support campaigns on sorting and sustainable packaging, highlighting food safety and environmental benefits.
2. **Harmonise municipal collection and sorting systems:** align municipal practices to improve sorting outcomes and reduce contamination from dirty recyclables.
3. **Invest in recycling capacity and quality:** upgrade recycling plants to produce food-contact-safe recyclates. Promote advanced technologies to secure high-quality material streams.
4. **Support SME innovation and pilots:** provide funding for SMEs to develop sustainable packaging materials (e.g. mono-materials, recyclable coatings). Support pilots with reusable crates and big bags.
5. **Encourage unpackaged food and refill models:** promote unpackaged food shops and refill initiatives, ensuring proper hygiene and safety standards.
6. **Facilitate cooperation platforms:** establish stakeholder dialogue platforms connecting municipalities, SMEs, producers, retailers, and consumers to foster joint solutions.
7. **Prepare SMEs for PPWR compliance:** offer advisory services, training, and guidelines to help SMEs align with upcoming EU requirements.





5.5 Latvia: Less Developed Region

5.5.1 Regional context

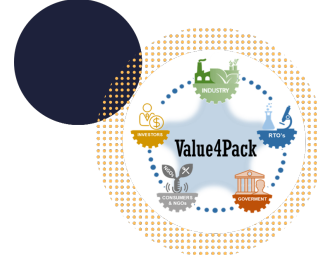
Latvia, with a population of under two million, is strategically located on the Baltic Sea and plays an important role as a regional trade hub. The country generates more than 41,000 tons of plastic packaging annually, yet less than half of this amount is recycled. A significant share of packaging on the market – around 40% – is multi-layered, which reduces recyclability. Overpackaging is common, with about 7% of products sold in packaging that is unnecessarily large or includes secondary packaging designed mainly for marketing purposes.

Labelling practices add to the challenge. Many packages display inconsistent or incorrect sorting symbols, often too small or obscured by excessive colours. This makes it harder for consumers to sort waste correctly. Producers also interpret recyclability differently, complicating the transition from multi-layer to mono-material solutions.

Despite these gaps, Latvia has clear strengths. Its Smart Specialisation Strategy (S3) prioritises the bioeconomy and circular economy, and several innovative projects are already underway – from biodegradable cheese casings made from whey, to seaweed-based packaging and recyclable cardboard varnishes. Latvia also has experience in recycling glass, bio-waste, and textiles. Stakeholder workshops under Value4Pack confirmed strong motivation among producers, municipalities, and researchers to align with EU sustainability targets, but stressed the need for more consistent infrastructure, standards, and public awareness.

Key challenges in the region

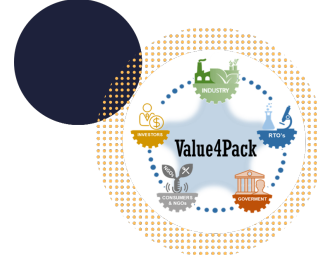
- **High share of multi-layer packaging and overpackaging**, reducing recyclability.
- **Inconsistent and unclear labelling**, causing confusion for consumers.
- **Limited capacity of the packaging sector to transition to mono-materials**.
- **Low public awareness** and limited education on recycling and reuse.
- **Lack of unified recycling standards** across municipalities.
- **Regional disparities in infrastructure** and dependence on waste exports.
- **Pressure on SMEs** to balance cost competitiveness with sustainability.



5.5.2 How can Latvia move forward? (Policy recommendations)

1. **Standardise waste sorting symbols:** introduce a national system of clear, unified pictograms on packaging, aligned with future EU standards. Support the rollout with consumer campaigns to ensure proper understanding and use.
2. **Implement a Digital Product Passport:** pilot a digital product passport system with packaging and food producers, refine it through testing, and then scale it nationally. Link to EU-wide initiatives on product traceability and recyclability.
3. **Strengthen public education campaigns:** launch recurring educational programmes in schools, communities, and national media. Involve diverse stakeholders in designing and monitoring campaigns to ensure real impact.
4. **Support RDI in bio-based and recyclable packaging:** provide funding for research and innovation projects such as whey-based films, seaweed packaging, and recyclable coatings. Encourage collaboration between universities, SMEs, and clusters to bring innovations to market.
5. **Improve reuse systems and practices:** promote refill stations in supermarkets, expand second-hand initiatives, and pilot closed-loop systems in retail and hospitality to reduce single-use packaging.
6. **Upgrade recycling infrastructure and standards:** harmonise recycling standards across municipalities, expand domestic facilities for plastics and glass, and reduce dependence on exporting waste to neighbouring countries.





6 More developed region's (MDR) Insights & Best Practices

The five Less Developed Regions did not work in isolation. Their policy recommendations were reviewed and enriched through dialogue with More Developed Regions across Europe. This process brought valuable lessons, showing what has already worked elsewhere and how those experiences can inspire future action.

Awareness and behaviour change

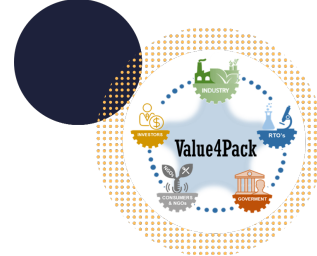
- MDRs emphasised that **awareness campaigns must be long-term and repetitive**, not one-off projects.
- Southern European partners highlighted **consumer-owned containers in retail**: pilots showed uptake rises when hygiene rules are communicated clearly.
- MDRs recommended linking **awareness campaigns with measurable KPIs**, such as sorting accuracy or return rates, and involving schools and youth programmes to ensure generational change.
- Practical examples were shared of campaigns using **gamification and digital tools** to engage consumers, especially younger audiences.

Standardisation and labelling

- Western European MDRs pointed out that **harmonised pictograms and simplified sorting rules** reduce consumer confusion and contamination.
- They stressed the importance of **aligning national labelling systems with upcoming EU-wide standards** to avoid costly transitions.
- Partners noted that **excessive colours and printing on packaging** reduce recyclability, suggesting stricter design guidelines.
- MDRs also recommended **digital labelling solutions**, such as QR codes, to complement physical symbols with detailed recyclability information.

Reuse and refill systems

- MDR comments repeatedly underlined that **reuse works only when supported by logistics and hygiene infrastructure**.
- Examples included pilots with **certified washing facilities** for reusable packaging, ensuring safety and consumer trust.
- Northern European partners shared cases of **digital traceability systems** (e.g. barcodes, QR, RFID) that track reusable packaging through multiple cycles.
- MDRs advised involving **schools, universities, and community hubs** as testing grounds for reuse, combining education with practice.
- Southern European experiences also stressed that **clear rules for consumer-owned containers** in retail are essential to scale reuse.



Innovation and SME support

- Western European regions highlighted the role of **clusters and cooperative R&D platforms** in helping SMEs access innovation they cannot afford alone.
- MDRs shared successful pilot projects on **mono-material packaging, recyclable coatings, and lightweight designs**.
- They recommended **public funding schemes for SME innovation** that are flexible and easy to access.
- Partners also pointed to the importance of **connecting SMEs with research institutions**, ensuring technology transfer.
- A recurring comment was that **innovation should be practical and market-driven**, not just research-focused, with SMEs supported to test and scale solutions.

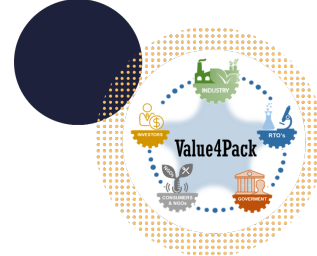
Infrastructure and recyclates

- Northern European partners highlighted the value of **advanced deposit-return systems**, covering not only PET bottles but also glass and reusable food packaging.
- MDRs shared experiences with **camera-based quality control systems** to guarantee food safety in reusable packaging cycles.
- They underlined the need for **investment in food-contact-safe recyclates**, as this is a bottleneck across Europe.
- Partners also stressed that infrastructure projects should be **combined with quality monitoring**, not just capacity expansion.
- MDRs encouraged LDRs to explore **regional cooperation in recycling infrastructure**, as cross-border facilities can sometimes be more efficient.

Why these insights matter

Together, these insights illustrate how experiences from More Developed Regions can shorten the learning curve for Less Developed Regions. They show that awareness, clear rules, strong logistics, cluster cooperation, and modern infrastructure are not separate issues but parts of the same solution.

The MDR contributions helped validate the recommendations of the five LDRs and added practical examples. They demonstrate that moving towards circular packaging is not an abstract goal — it is already happening in parts of Europe, and with the right support, it can happen everywhere.



7 EU-Level Policy Recommendations

The following recommendations bring together the insights of five Less Developed Regions (LDRs), contributions from More Developed Regions (MDRs), and alignment with the European policy framework. They are structured around the **4R principles – Refuse, Reduce, Reuse, Recycle** – to ensure coherence with both regional and EU-level objectives.

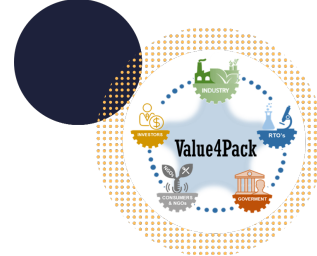
While regional recommendations reflect local contexts, the measures presented here highlight **what requires coordinated action at European scale**. They are intended to help EU institutions design policies, funding programmes, and support tools that accelerate the packaging transition across all Member States.

Each subsection is presented in a practical format:

- **Why it matters** – the European-level challenge or opportunity.
- **Actions** – what EU institutions can do.
- **Expected outcomes** – what can be achieved if implemented.

This structure makes the recommendations accessible for policy makers and funding bodies, while ensuring a clear link between regional realities and European priorities.





7.1 Refuse – Prevent packaging waste at source

Why it matters

The most effective way to cut packaging waste is not to generate it in the first place. Across Europe, unnecessary packaging and single-use formats still dominate many product categories. This not only increases waste volumes but also adds costs for businesses and municipalities. Citizens are increasingly demanding simpler, less wasteful solutions – yet progress remains uneven without common rules and incentives at EU level.

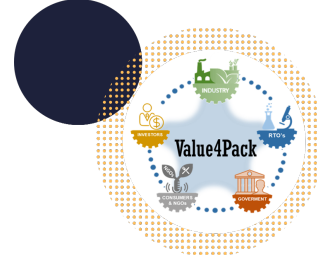
Policy recommendations

- Set clear **EU eco-design criteria** that eliminate avoidable packaging, including excessive secondary packaging and formats with no functional value.
- Promote **packaging-free and refill models** in retail through EU guidance and targeted funding programmes.
- Support **public procurement criteria** that favour reduced or no-packaging solutions in schools, hospitals, and public canteens.
- Encourage **digitalisation and logistics innovations** (e.g. e-labels, bulk delivery systems) to cut down packaging demand.

Expected outcomes

- Lower packaging volumes placed on the EU market, reducing waste at source.
- Greater uptake of reuse and refill schemes, especially in retail and HoReCa.
- Cost savings for businesses and municipalities from reduced packaging demand.
- Stronger alignment with the waste hierarchy: prevention first.





7.2 Reduce – Design smarter, use less

Why it matters

Even when packaging is necessary, its environmental impact can be lowered through smarter design, lighter materials, and reduced use of harmful substances. Today, many products are still overpackaged or rely on materials that are difficult to recycle. SMEs, in particular, struggle to redesign packaging without clear guidance or support. At EU level, reduction targets and harmonised rules can ensure that all Member States move in the same direction, while creating a level playing field for businesses.

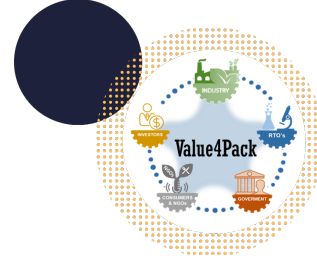
Policy recommendations

- Define **EU-wide reduction targets** for packaging placed on the market, with clear timelines and monitoring mechanisms.
- Introduce **harmonised labelling rules** to simplify sorting and reduce consumer confusion, aligned with the PPWR.
- Promote **lightweight packaging and mono-material solutions** through EU funding for RDI projects, particularly targeting SMEs.
- Support **eco-modulated Extended Producer Responsibility (EPR) fees**, rewarding companies that reduce packaging volumes and design for recyclability.
- Encourage **cross-sector cooperation** (food producers, retailers, packaging designers, recyclers) through EU innovation platforms and cluster initiatives.

Expected outcomes

- A measurable reduction in packaging volumes and environmental footprint across the EU.
- Easier sorting and higher recycling rates thanks to standardised labelling and simpler designs.
- Increased SME participation in sustainable packaging innovation.
- Fairer cost distribution through EPR schemes that reward frontrunners.





7.3 Reuse – Make reuse safe and scalable

Why it matters

Reuse is central to building a circular packaging system, but it requires infrastructure, logistics, and consumer trust to succeed. While some Member States already operate deposit–return systems or pilot refill stations, these efforts remain fragmented and often limited in scale. Without EU-level coordination, reuse models risk remaining small experiments instead of becoming mainstream. Clear rules, hygiene standards, and cross-border systems are needed to make reuse a practical reality.

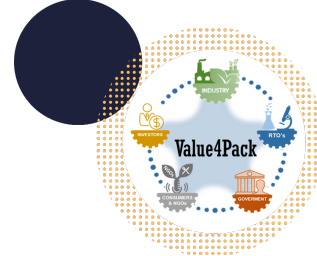
Policy recommendations

- Establish **EU-level targets for reuse and refill** in line with the PPWR, with monitoring mechanisms to track progress.
- Provide **guidelines on hygiene and food safety** for reusable packaging, ensuring consumer protection and trust.
- Support the rollout of **certified washing and logistics facilities** for reusable packaging through EU funding programmes.
- Promote **digital traceability systems** (e.g. QR codes, RFID, barcodes) to track reusable packaging through multiple cycles.
- Facilitate **cross-border alignment of deposit–return systems**, enabling packaging to circulate beyond national borders.
- Encourage **public sector leadership** by integrating reusable packaging into schools, hospitals, and public canteens through procurement rules.

Expected outcomes

- Scalable and safe reuse systems integrated into mainstream markets.
- Increased consumer confidence in reusable packaging thanks to hygiene protocols and digital traceability.
- Cost savings for businesses and municipalities through efficient logistics.
- Reduced dependence on single-use packaging and significant progress towards PPWR reuse targets.





7.4 Recycle – Build capacity and ensure quality

Why it matters

Even with prevention and reuse measures, a large share of packaging will still require recycling. Today, recycling capacity and quality vary widely across Europe. Many Member States lack facilities capable of producing food-contact-safe recyclates, and contamination from poor sorting remains a barrier. Without stronger EU action, the Union risks falling short of its 2030 and 2035 PPWR targets. Investment, harmonisation, and monitoring are essential to scale up recycling while ensuring high quality and safety.

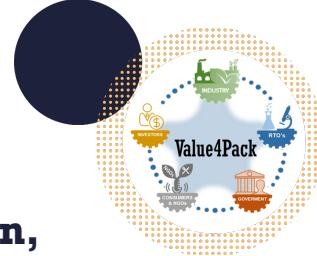
Policy recommendations

- Expand **EU funding for recycling infrastructure**, prioritising advanced technologies (mechanical and chemical) and food-contact-safe outputs.
- Harmonise **quality standards for recyclates** at EU level, ensuring safety and market trust.
- Support **digital product passports** for packaging to improve traceability and recyclability data.
- Promote **harmonised collection and sorting systems** across Member States, reducing consumer confusion and contamination.
- Strengthen **EPR schemes** to channel investments into recycling capacity and innovation.
- Facilitate **cross-border cooperation** on recycling plants and shared facilities where national scale is insufficient.

Expected outcomes

- Increased availability of high-quality, food-contact-safe recyclates across the EU.
- Higher and more consistent recycling rates, closing the gap between frontrunner and lagging regions.
- Better consumer participation through harmonised collection and labelling.
- Stronger EU market for secondary raw materials, reducing dependence on virgin plastics and imports.





7.5 Cross-cutting enablers – Funding, cooperation, and monitoring

Why it matters

The transition to circular packaging cannot be achieved by technical measures alone. It requires enabling conditions: investment, cooperation platforms, and reliable monitoring. Without these, even the best-designed regulations risk inconsistent implementation and uneven impact across Member States. Enablers provide the backbone that allows the 4R measures to succeed.

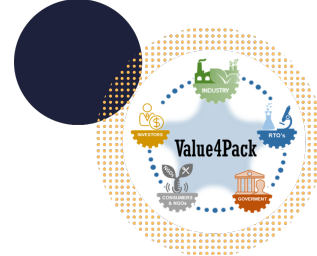
Policy recommendations

- Mobilise **EU funding instruments** (Cohesion Policy, Horizon Europe, LIFE, InvestEU) to prioritise sustainable packaging projects, especially in Less Developed Regions.
- Strengthen **cluster and interregional cooperation** through European networks and partnerships, enabling knowledge transfer between frontrunner and lagging regions.
- Establish **EU-wide monitoring and reporting systems** to track progress on the 4R targets, ensuring data comparability across Member States.
- Provide **technical assistance and advisory services** for SMEs to access funding, adopt eco-design, and comply with PPWR requirements.
- Promote **public-private partnerships** that bring together industry, municipalities, and research organisations to scale up solutions.
- Encourage **citizen engagement** by supporting European-wide awareness campaigns and digital tools linked to the 4Rs.
- Define a **common set of EU-level KPIs** (e.g. return rates, sorting accuracy, share of food-contact-safe recyclates) and publish regular progress dashboards to ensure transparent tracking across Member States.

Expected outcomes

- More balanced access to EU funds, ensuring that no region is left behind in the packaging transition.
- Stronger interregional networks that shorten the learning curve for LDRs.
- Transparent and harmonised reporting, enabling evidence-based EU policymaking.
- Greater SME participation in innovation and compliance.
- Citizens empowered to take part in Europe's packaging transition.





8 Closing section

This booklet brings together the voices of five Less Developed Regions – Poland, Lithuania, Hungary, Slovenia, and Latvia – and the experiences of More Developed Regions, united under the shared ambitions of the Value4Pack project. Despite differences in geography and industry, the challenges are often the same: limited infrastructure, low awareness, weak cooperation, and the need to prepare SMEs for the requirements of the forthcoming Packaging and Packaging Waste Regulation (PPWR).

The recommendations presented here – structured around the 4R principles of **Refuse, Reduce, Reuse, Recycle**, and supported by cross-cutting enablers – show how both regional authorities and European institutions can act. At regional level, they provide concrete steps to improve awareness, innovation, infrastructure, and cooperation. At EU level, they highlight what only the Union can deliver: harmonisation of rules, fair access to funding, cross-border infrastructure, and consistent monitoring.

These proposals are not abstract. They are grounded in the daily realities of SMEs, municipalities, recyclers, and consumers across Europe. They demonstrate that prevention, reuse, and recycling are already possible in many places – and with EU support, they can become the norm everywhere.

The interregional cooperation within Value4Pack, combining Less Developed Regions with More Developed Regions, has shown that knowledge transfer and shared practices are key to accelerating the transition. Together, the regional chapters, MDR insights, and EU-level recommendations form a practical roadmap for building circular packaging systems.

This deliverable is not the end of the journey – it is a steppingstone. By adopting and acting on these recommendations, regional and European actors can ensure that no territory is left behind, and that Europe builds a packaging system that is not only compliant with the PPWR but also **fair, competitive, and truly circular**.

